

# SUPPLEMENT.

# The Mining Journal, RAILWAY AND COMMERCIAL GAZETTE:

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LONDON, SATURDAY, MARCH 4, 1882.

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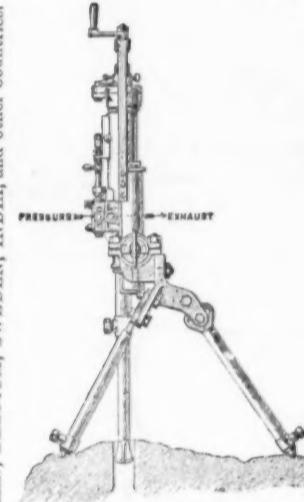
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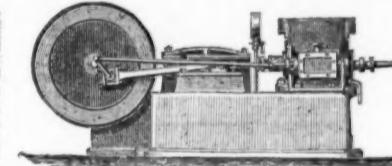


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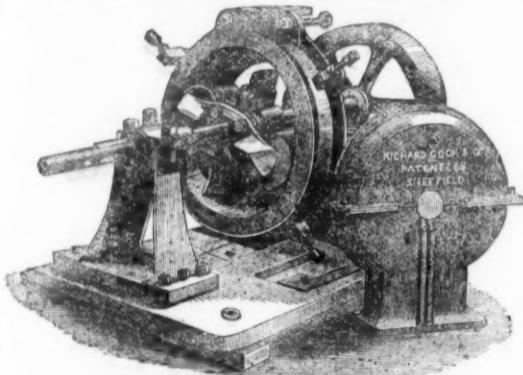
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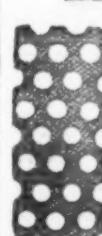
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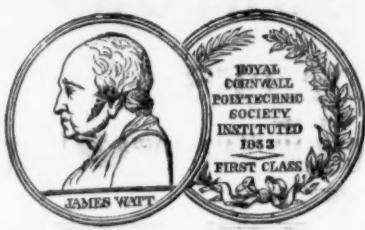
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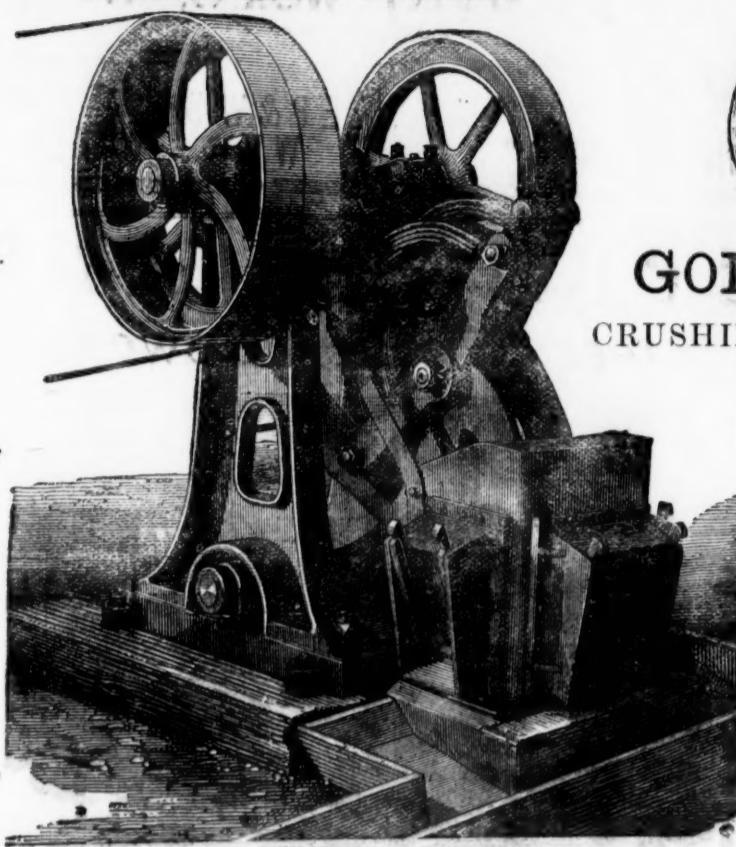
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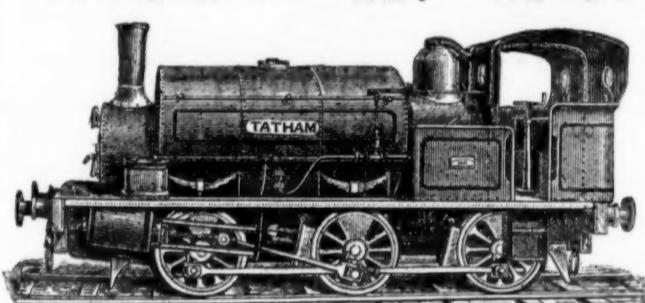
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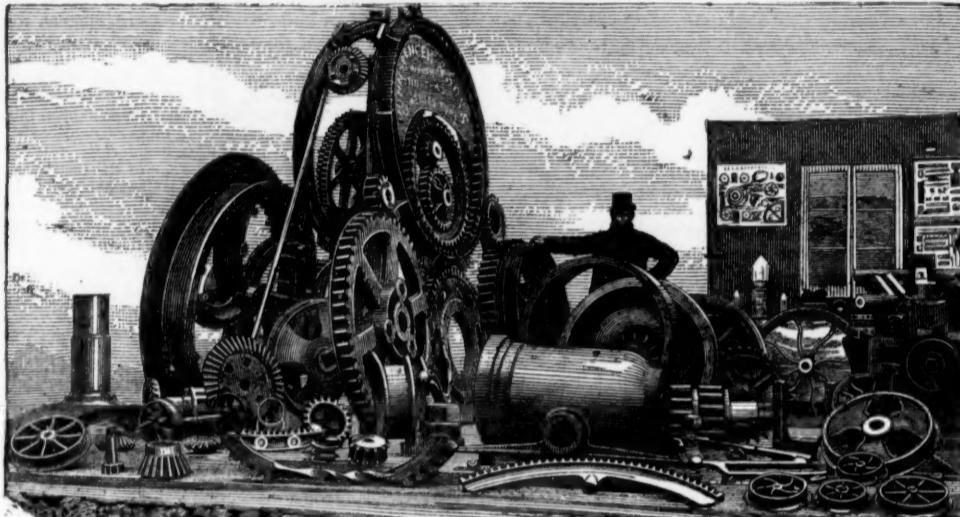
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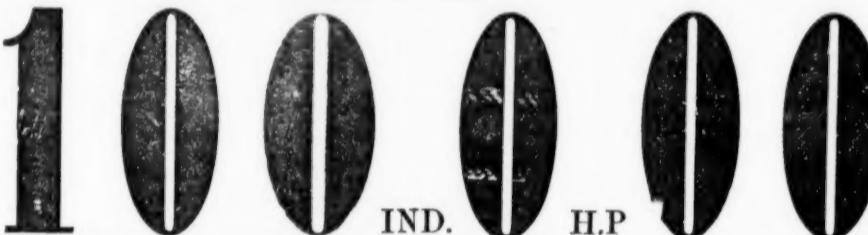
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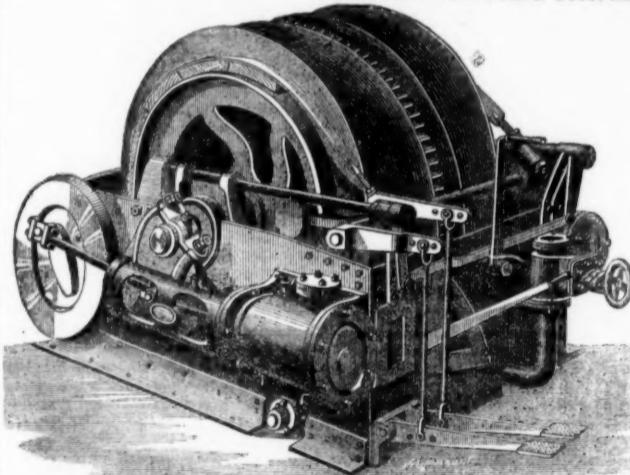
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[This Advertisement appears fortnightly.]

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TUBES

## Original Correspondence.

## THE GOLD AND DIAMOND FIELDS OF SOUTH AFRICA.

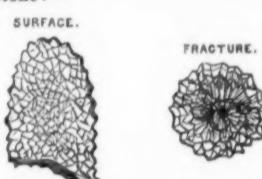
SIR.—In my letter of the 19th Jan. I pointed out that the Central Company (Kimberley) would pay off their liabilities, and declare a large dividend; but, in consequence of there being in effect no Mining Board, they will not be able to declare (this time) such a large dividend as they would have otherwise done. Therefore, I think an explanation is due to the readers of the Journal. It will be remembered by some of your readers that in my letter of Nov. 10 I pointed out that the Kimberley Mine had almost collapsed owing to the claims having been buried under water and fallen reef. The responsibility of removing the water on this as on some former occasions was forced upon the Central Company, who, while they were hauling water for the benefit of the whole mine, were not able to pull out but a small quantity of their diamond soil; but they were, nevertheless, running up a big score against the Mining Board, whose duty it is to keep the mine clear of water. They have now a claim against the Mining Board of 160,000*l.*, which with the profits arising from the sale of diamonds would have enabled the company to pay such a dividend for the quarter as is seldom paid by any mining company. As there is no Board to pass the accounts the money cannot be paid, and consequently the Central shareholders will have to wait for this portion of the dividend until a later period. This company has been hauling out during the past week 1500 loads of blue (diamond soil) per day, of the value of about 3*l.* per load. The pickmen in breaking the ground have also picked out some beautiful stones from 30 to 90 carats. It is fortunate for them that they have been able to do so, because the fire in the south side of the mine is stronger now than it has been for some time, and should the rains set in soon, as there is reason to expect, most of the payable ground in the Kimberley Mine will be unobtainable for some weeks.

I regret to say that in consequence of the fire the south side of the Kimberley Mine is slipping down, and covering nearly all the payable ground of the celebrated French Company; in fact, there is not a company in the mine that is not suffering. I hear that the French Company is to be refloated in England. I know the real reason of its being placed in England; nevertheless, it is a concern that I can highly recommend to English investors, provided they exercise a fair amount of caution. Investors should ascertain the amount of reef liability which they would be chargeable, the average quality of the soil, and most important of all, whether the company actually owns as much ground as is generally supposed. It is a splendid property, and contains all the elements of abundant success; but they sold some claims sometime during the company mania, the particulars of which are somewhat obscure. The Rose Innis Company is quite buried, and it is very certain they will not earn a dividend for the first half of the year, although the parties who took their tailings to wash at 75 per cent. are making a rapid fortune.

At De Beers the Schwabs Gully Company have declared a dividend of 6 per cent., but most of the big companies are going from bad to worse. At Kamfers Dam no improvement since my last. At Jaggersfontein there are some good finds, and if the companies were better managed some would pay. Bultfontein suffers under an incubus in the shape of intrusive rock; some of the companies have sunk a good distance in it without finding the bottom. Dutoitspan is, in my opinion, a good mine. The Anglo-African Company is capable of paying from 14 to 16 per cent. per annum, or perhaps more, as the Messrs. Marks take a deep interest in the management, and those gentlemen (compared to most people here) are worth 3 or 4 per cent. per annum to any company. The Orion, too, is a good company, and ought to pay from 14 to 16 per cent. per annum. The Griqualand West Company ought to pay from 10 to 12 per cent. per annum. Nothing is being done at Taylor's Kopje or Victoria Kopje. I do not think either of them are any good.

I have just paid a visit to Otto's Kopje, and the general character of the stuff is by no means so good as the sample which was brought me last week. It is not like the diamond soil of the Kimberley Mine. In fact, the component parts of the formation are different from all the other mines; nevertheless, I shall not be surprised to find that it contains diamonds in payable quantities. They have sunk a shaft over 100 feet, and haul the stuff with a 6-horse power engine, and intend giving the place a fair trial.

In the Journal of Dec. 17 you call attention to the finding of a 460 carat diamond in the form of a sausage, and W. C. Korthals the following week refers to it as a "startling announcement." Whatever it may be in Europe it is by means startling here. I did not see the 460 carat stone to which I referred, but it was alluded to in all the local papers. The Diamond News gave the particulars as to its shape and colour. It is supposed to be concealed amongst the Upper Ten—I mean the illicit diamond buyers, or the curse of Kimberley. I have never seen a whole diamond in the form of a sausage; but I have seen scores of diamonds like the broken end of a sausage, from 1 in. to 2 in. long, which had evidently been broken with the pick or in blasting. The following is a rough sketch of one I saw on Saturday last. It is in its original form, with the exception of having been broken, and its surface has evidently not been affected by rubbing against any other substance. It is sketched the full size of the stone:—



I ought, perhaps, to mention that all the stones I have seen of this shape are of very inferior quality—either a brown or rusty black. This stone was found in the Kimberley Mine. I have so frequently referred to the geological character of the locality that a repetition seems almost unnecessary. I may, however, inform Mr. W. C. Korthals that the diamond formations of Coacás, Concucio, Diamantina, &c., does not bear the slightest resemblance to the diamond formations of Griqualand West.

News from the Transvaal is of a very unsatisfactory character. There is fighting all along the western border, and some chiefs have agents here offering as much as two oxen per day to white men to assist them, the whites to find their own ammunition. Old Masiwa is reported to have had the best of it so far. I saw one letter stating he had killed 30 Boers. At the gold diggings the Israelites appear to be usurping the Government, and driving the diggers to desperation. I have seen several letters showing how that little Benjamin is trying to ride over old diggers rough shod. The following letter is from Monday's Advertiser, but is mild compared to several private letters I have seen:—

*Pilgrim's Rest, Jan. 7.—SIR: I forward you copy of proceedings of public meeting of miners, held at the Court House, Pilgrim's Rest, Jan. 2, 1882, to consider the terms Mr. Benjamin would be likely to offer the diggers. The meeting passed on very quietly, though an onlooker could see that there was a marked determination to resist legally, to the utmost, any innovation on their hard-earned rights. Mr. Benjamin read from a memo. in his possession to the following effect:—1. That alluvial or creek claim licenses be 1*l.* a month. —2. That quartz claim licenses be 10*l.* per month. —3. A tax of 10 per cent. to be charged on the miners' valuation of all water races. —4. The proprietor declines to recognize any claim marked out since Nov. 7, 1881. —5. Should a digger work out his claim he cannot take up fresh ground without entering into fresh arrangements with the proprietor. —6. Mr. Benjamin will not recognize the sale of any property effected since Nov. 7, 1881. —7. That the proprietor will not allow the erection of machinery, except on his own terms.*

The question was asked Mr. Benjamin whether he intended compensating the miners. His reply was "No"—thus directly repudiating the obligation laid upon him by clause 10 of the Concession. Mr. Benjamin's Concession was passed by the Volksraad on Nov. 7, 1881, and granted to him on the 10th of the same month, appearing in the Government Gazette of Nov. 15, 1881. The Gazette arrived at the Gold Commissioners office on Nov. 23, 1881, it being the first intimation received of the Concession having been granted.

The meeting adjourned and re-met in the town, when the following resolution was carried unanimously:—"That the miners claim all their rights, interests, and privileges on the Lydenburg gold fields, according to the rules and regulations laid down for the working of the same by the 'Gold Law.'" A copy of the above resolution was handed at the close of the meeting to Mr. Benjamin. In the interests of the miners I should feel obliged if you would insert this com-

munication in your paper, and give to it that publicity which your notice of any public affair has always commanded.

As I have pointed out on previous occasions Pilgrim's Rest has been declared a public gold field for over 10 years, the rules being the same as Australia and California; and it is only a short time since that Benjamin and party bought the farm, knowing that it was a public digging. But they knew more; they knew that before the diggers came to the place, and spent years in exploring and constructing watercourses (without earning a fraction) the property was not worth a 5*l.* note. If these persons are allowed to interfere with the existing interests of the diggers they will secure to themselves the result of nine or ten years labour of honest hardworking Australian diggers. If the diggers were allowed (say) two years to work out the ground that they have been so many years preparing for they could leave the place, and leave Benjamin and party in possession of his farm, to work with slaves if he thought proper. Because after the present claims are worked out no white man will care to go there, as the gold then will cost, on an average, from 10*l.* to 12*l.* per oz. I do not say that a few careful plodding old diggers might not fossick about and earn a living for years; but for the operations of a big company a worse place than Pilgrim's Rest cannot be found. The terms Benjamin offer the diggers are monstrous:—"1. 1*l.* per month for an alluvial or river claim." There is not a claim there worth more than a nominal value (say) 1*s.* per annum. —"2. Quartz claim license 10*l.* per month." This is monstrous. There is not a quartz reef on the whole property, and to charge 10*l.* per month on the three or four superficial deposits of quartz belonging to the Brothers Lockhead and party, after they have spent so much time and money in finding them, is enough to provoke a rebellion. —"3. A tax of 10 per cent. to be charged on the miners' valuation of all water races." A more abominable attempt to deprive Englishmen of their just rights and to oppress the poor was never attempted. These men constructed those watercourses at their own expense, unassisted by Government, under the protection of the Government Ordinance. If they have to pay 10 per cent. on their actual outlay it will absorb all the income arising from their construction, for not an inch of ground would have been worth a farthing without the watercourses. If the miners should value the watercourses at a very low figure they will, of course, be compensated (?). Clauses 4, 5, 6, and 7 speak for themselves.

The Pilgrim's Rest diggers deserve better treatment at the hands of the Boer Government; they kept quite neutral during the war, and accepted the change of Government with becoming grace. If this act of the Government is persisted in they will have sold all the Lydenburg district and diggers to a party of individuals who will attempt a system of confiscation which an impudent Government shrank from attempting. People in England and Australia and America have very little idea of the wrong that is being done to their friends in the Lydenburg district of the Transvaal, and it is the duty of the Press to use its powerful influence in procuring justice for the honest and hard-working diggers of the Transvaal. The conduct of the diggers throughout this trying ordeal has been admirable, and the resolution to claim their rights, according to the rules and regulations laid down for the working of the gold fields, ought to receive the support of every lover of justice.

*Kimberley, Feb. 2. CORRESPONDENT.*

P.S.—I have just seen the South African of Dec. 29, wherein the editor refers to myself and Kitto. I should not take any notice of it but for the paragraph where he refers to Kitto being dead and buried. The writer knows that a hint of that kind bears a very different construction here to what it does in England, and however well paid they may be to write down a person they ought to be a little more cautious.

## INDIAN GOLD MINES—THE COLAR DISTRICT.

SIR.—The shortcomings of the Colar gold fields have been well ventilated in the columns of the *Mining Journal* to the good purpose of enlightening the shareholders, for the management of some of them, particularly of the Ooregum, has been not only slow, but apparently defective and negligent. I refer the blame to the directors. By their lately issued report, and that of Mr. Bell-Davies, much time and money have been spent in doing what had been done before to no purpose; in making prospecting pits, five or more, in ground already so tested, instead of raising quartz from the shaft or shafts already proved (that is if we accept the representations of the prospectus as truthful) by the old company in 1880, when payable gold was found. And at the meeting in March, 1881, the Chairman, Sir W. Arbuthnot, told us that one of the shafts was an old one, and had yielded considerable quantities of gold, that the vein was there 80 ft. from the surface, and we had only to follow it up. In a special report from Mr. R. St. Stephens it is made clear that he informed Messrs. Arbuthnot and Co., in his reports in January and June, 1881, "that the whole strength of the staff should be concentrated on the shafts," from which he says he has assayed and tested, and found the most satisfactory evidence of auriferous ore. But instead of proceeding to the development of the three shafts that are now to be worked, or prepared for working, nearly a year has been spent and much capital in unproductive work. Who is to blame? The manager was blamed; but what does he have to say? In the *Mining Journal* of Dec. 10 last, he replies effectively to the unjust references made to him by Ranajee Steffee, who was on the Ooregum as the inspecting engineer for Arbuthnot and Co., of Madras, and who may be Mr. R. St. Stephens himself. He says, "While at the Ooregum Mine I was superintendent merely in name, Messrs. Arbuthnot and Co., of Madras, being the real managers. This firm has directed all operations from the first. Their management is, in my opinion, unsatisfactory, and I have protested over and over again against it." Mr. Kensington declines to say anything about the mine, but "hopes to be present at the next shareholders meeting, when any information he possesses will be heartily at their disposal." This is straightforward if true, but it is let us remember from one who had been reproached with "masterly inactivity" for the purpose of "bearing" the share. But I think there are others so to blame, those who had Mr. St. Stephens reports early in 1881, as to what should be done, and had it been done the mine would have a higher position in the market now than the Mysore. See report just issued by order of the board, which is highly encouraging, and on which I hope to be allowed to make some remarks in a future letter.

A. J. S.

## INDIAN GOLD MINES.

SIR.—Noticing in last week's Journal the letter of "X. Y. Z." which says, "There is a noisy clique of disappointed failures who are attempting to re-establish their credit and injure those who dismissed them, by disparaging in every way, publicly and privately, the mines which their incompetence have already injured, and the mining field which was the scene of their own failure." This statement is false both in substance and in fact, and is further a charge that the directors, the late employers of these so-called failures, have not and dare not make against us. It will be quite time enough to talk about the incompetence of those who have had charge of operations in India when the sanguine supporters of this "gilded delusion" prove to the world by results that the quartz reefs exist there. Till then I think the public will give us credit for honesty of purpose, and believe that we have what some men may lack—*i.e.*, the courage of our opinions. There is not the smallest amount of evidence that we are wrong in the opinion we have formed, nor is there anything in the news that the directors of these companies furnish their shareholders with that can by any flight of imagination be construed into a favourable state of things, or give to the expectant investor the faintest ray of hope that these mines will pay in the future. I would ask "X. Y. Z." if any of the promises made in the prospectuses have been realised; but on the contrary, has it not been shown, plainly and clearly, that a very large number of the statements contained in them are wholly unreliable?

The day is not now far distant when we shall be proved right in our views, and the unfortunate shareholders will be awakened to the truth of the phrase, *Ex nihilo, nihil fit*. A gentleman who, in a letter to the *Mining Journal*, described himself as the consulting engineer to a private firm told me last August that before he had been at Ooregum a month he would again have the shares at a premium. He has now been there seven months, and the shares are

still at a heavy discount. He said, further, that he intended to throw some light upon the excellent work done and the extraordinary results obtained by Capt. Bryant's predecessor; but he has not done so. It is now six months since the elephant stamps were started at the Mysore camp by the Maharajah of Mysore, and is it not true that a large quantity of quartz had been crushed? The company deny it, but it is a fact nevertheless. The Madras Mail stated that 100 tons had passed through the mill, months ago. Still, we have not heard the result. What can it mean? And is it uncharitable to surmise that it was *nil*? For myself, I repudiate with scorn the imputation that we wish to re-establish our credit by disparaging these mines (our credit is not yet proved forfeited), or that we have any personal feeling against our late employers, and I am certain we appreciate the meaning of the word "honour" in its truest sense. The tide of events will lay bare the result ere long. Meantime, I am contented to remain,

*Preston, Feb. 28.*

F K

## INDIAN GOLD MINING.

SIR.—In all this conflict of opinion and report it is something to be able to get the evidence of the sober statement of disinterested practical observers. One of our agents, thoroughly well qualified by long experience with Colorado and Californian mining and milling, and subsequently by his connection with a good deal of the Wynnaid mining, states most decidedly that gold quartz lodes of paying quality do exist in the Wynnaid, and that some of the mines there are opening out hopefully, not to say satisfactorily, and he believes, what indeed we ourselves have long since suspected, that it is the milling, and not the mining, that fails. Mere milling with the usual treatment with mercury will not answer the purpose. The Indian mining is encountering the same difficulties as those which so long and so seriously hindered the early development of Colorado and Californian mining, which has since become so prosperous.

Happy those (the Central Wynnaid, for example) who have not spent their capital in ineffectual milling preparations, but, electing to proceed cautiously, have not committed themselves further than is absolutely unavoidable until the controversy attending the first stage of the history of this mining shall have demonstrated what is the right course to take. We have within the last few days inspected some fine lodestuff from the South-East Wynnaid Mines. It possesses the well known streaked or alternating rock and sulphide character of gold quartz veins.—London, March 2. RICKARD BROTHERS.

## INDIAN GOLD MINES—MYSORE DISTRICT.

SIR.—As at none of these Colar gold fields can crushing be begun till we have had much rain to fill our dams and tanks, and with the exception of Ooregum none can be had from below, it may be of interest to your readers and to many shareholders in the various companies on this field if you will kindly publish the rain-fall at this camp since I came here in charge. The whole rain-fall has been 15·46 in. in 143 days, but as 13·47 in. fell on six days there remains only 1·99 in. for the other 137 days. Since Nov. 15, 82 days, the rain-fall has only been 77 in., or less than 1·100 of an inch per day.

1881.	Inches.	1881.	Inches.
Sept. 17	1·27	Nov. 5	·10
" 18	2·83	" 6	·10
" 19	·14	" 8	·23
" 20	·12	" 13	2·29
" 28	·14	" 14	·09
" 29	2·27 = 6·77	" 15	·10 = 2·91
Oct. 1	3·32	1882, Jan. 2	·65
" 2	·20	" 3	·12 = ·77
" 3	1·49 = 5·01	" 3	·12 = ·77
		15·46	= 15·46

HENRY MOON, M.E.,  
Manager of the Mysore Reefs Gold Mining Company.

AKANKOO (GOLD COAST) MINING COMPANY.  
TO THE SHAREHOLDERS, PER FAVOUR OF THE "MINING JOURNAL."

GENTLEMEN.—It is now nearly a year since I was engaged by your directors to go out to the West Coast of Africa to inspect and report on your property, which I did with the results as set forth in my report issued to you on my return on July 2, 1881. On the faith of that report, and the confidence reposed in my judgment by your directors, they decided to purchase the property; and, as I expected, would have proceeded with the work in a legitimate manner, as I advised. I have nothing to add or detract from my report on your mine, where, in clause 21, I stated that "you have a gold mining property well worthy of legitimate development, and one which I think, under judicious and careful management, can be made to pay a handsome profit on the capital invested in the mine." I am still of the same opinion, and am sorry, both for your sakes as shareholders, who have provided the capital, and for my professional reputation, that a good legitimate property should have been so disgracefully mismanaged. The evidence adduced at your meeting lately, held at the Cannon-street Hotel, was, I think, sufficient proof of the wasteful expenditure of your capital and the injudicious conduct of directors of gold mining companies in assuming the functions of mining engineers and ignoring the advice of competent authorities for the sake of airing their own peculiar crotchetts and the unpractical opinions of men who had never seen a gold mine before going with me to Africa, and whose views and opinions of mining management are not such as would inspire anyone with confidence.

The director who was paid by you to accompany me on the expedition, and to render me valuable assistance, very much neglected his duty, and instead of rendering me the aid he should have done, caused me much hindrance and annoyance by keeping a large portion of the Kroomeen doing useless work in transporting wooden houses from the port of Axim to the mine, and erecting them where and when they were not wanted, thereby wasting time and money, and I was compelled to resent his unwarrantable interference with my duties while on the mine, for doing which I have, it appears, incurred not only his hostility, but that of his co-directors, who since his return preferred adopting his ideas of mining management instead of mine. That is the reason why such a muddle has been made with the management, and so much money and time uselessly and wastefully squandered.

I beg, therefore, to announce that I am in no way responsible for the mismanagement of your affairs, nor of the waste of time and money incurred by your directors, who, having retained my services for some three months as your consulting engineer, after my return from Africa, accepted my reports as to the method of opening the mine, but for some unexplained and incomprehensible reason not only neglected and ignored my advice, but refused to pay me for my services. Thinking that such conduct on the part of your directors would not be approved of by a majority of the shareholders, I have been expecting an opportunity of making to you a personal explanation at a general meeting of the unsatisfactory position I occupied and the treatment I received, because I was too independent to allow myself to be interfered with or dictated to by men wholly unacquainted with the management or working of a gold mine.

At your first general meeting in June last, held while I was in Africa, your Chairman made the following statement to you:—"We sent out on your behalf one of the most able engineers we could find. We took the greatest pains to find his antecedents and everything about him. We did not consult the vendors or anybody else; but we went to the Royal School of Mines and made every inquiry we could. Commander Cameron, one of the directors, went very carefully into the matter, and upon his recommendation we sent out Mr. Cornish, and from the letters I have received I am of opinion that he is a very valuable man."

by the Chairman that they, the directors, had every confidence in me, and requested me to complete my reports, which on being done I asked for a payment on account of my services, when I was unceremoniously informed that my services were not recognised, and was referred to their solicitor for payment.

My position as consulting engineer to your company was to give advice and instruct your directors as to the management of your property, to advise and arrange for the purchase of stores, tools, machinery, &c., and the hiring of labour for working the mine; but your directors, from some unexplained reason, preferred ignoring my practical advice and adopting their own theoretical opinions, with the results already arrived at.

At your last meeting your directors refused to read a letter which I had specially addressed to you on this subject, and, as many of you are aware, I was prevented from making a personal explanation. I am not only prepared but desirous of making a full explanation of my views, not only of the value of your property, but of the disgraceful way in which the affairs of the company have been managed. It is in consequence of so much mismanagement in gold mining that has brought many really promising undertakings to ruin, and cast such a stigma on legitimate enterprise.

The Akankoo Mine is a good legitimate enterprise, and will, I trust, under more efficient management, be effectually worked and the shareholders handsomely rewarded, and the sooner they make an alteration in the management the better for themselves and the reputation of all concerned. It is with much regret I find it necessary in justice to myself, as also to the shareholders of the Akankoo Company, to make these remarks; but I cannot allow my professional reputation as one of the oldest mining engineers in Australia, to be impugned through the incapacity or enmity of the directors of your company.—I am, gentlemen, yours obediently,

THOMAS CORNISH, Consulting Mining Engineer.  
Author of "Gold Mining: its Results and its Requirements," "Our Gold Supply; its Effect on Finance, Trade, Commerce, and Industries," &c.  
Fenchurch-street, London, E.C., March 2.

#### NEVADA MINING—THEN AND NOW.

SIR.—Having recently returned to this country, after an absence of upwards of eight years spent in England and Wales, I am delighted to observe that the initial stages of mining have almost run their course. Those stages were characterised by a reckless sensationalism impelled by an enthusiasm worthy of a better pursuit. The rapidity with which one district after another was "done" and abandoned is sufficient evidence of the fact that fortune hunting was the incentive, and not mining in the true sense of the term. The country is great, and its material wealth, metalliferous and otherwise, is correspondingly abounding, but the conditions of their existence in the several departments of nature are broadly distinct, sensibly different, and definitely exclusive as respects each other. Natural phenomena throughout the vast domain of sublunary being organic and inorganic, animate and inanimate, are subject to and governed by law. The impress and expression of which, whether understood or not, are inseparable from the individual things or beings themselves. The ore of commerce and the product of a system of laws, elaborately ramified and consecutively elaborated in the subterranean recesses of the hidden rocks, solely I doubt not by electrical and aqueous agencies; the medium, therefore, through which these agencies act are the rocks themselves, and in their recesses and repositories the product of their functions should be sought. The superficial are the result of disruptive forces, or an abnormal condition of nature, a defect in some of the conductive or eductive avenues impeding or wholly obstructing the necessary channels of the essential agents, caused, or produced it may be, by the intrusion of igneous rocks, or a generally unfavourable disposition and structure of the strata, dissimilar, constitutionally, uncongenial, and relatively adverse. But experience teaches knowledge, and knowledge thus acquired and rightly applied is undistinguishable from wisdom.

The wisdom of mining, then, or that which pertains to it as such, is knowledge, which if not practically and experimentally acquired, with whatever aids, is not the thing intended, but a spurious substitute, which only lead to speculative practices, prompted by nothing more tangible or reliable than abstract ideas, and prosecuted in utter obliviousness of what should or must result therefrom. If the dictum that "experience teaches fools" be correct, all men engaging in enterprises they do not fully understand are fools, but in what way is practical and experimental knowledge to be acquired but by experience? The rules of abstract science merely outline speculative practical procedure, which means speculative experimentation, and only receive very qualified endorsement prior to the experiment being proved satisfactory. Does the geologist attain eminence in his profession from the mere study of books, and did he or does he now know anything of metalliferous mining but what he has seen and inferred from practical experiments which miners themselves have made? Inference follows facts, and practical facts are not only gained but attested by experience. Whatever may be said in favour of scientific acquirements, *per se*, pertaining to the practice and conduct of mining, as to its being superior to practical experience, or even equal thereto, the whole history of mining on this coast flatly and most unequivocally contradicts. There has been no lack of science in respect of this great industry, the country has teemed with scientists; graduates from American, German, and other schools and colleges, but they found no vocation for, nor scarcely any recognition of, their theories. The more intent on mining pursued sensible objects, and inferred therefrom in respect of others, according to the lights they possessed. Science obtained no credit, nor even the practically experienced miners of the oldest mining countries. The conceit predominated "that one man could dig a hole in the ground as well as another," and that there was no analogy between mining on this coast and in other countries. Everything American was regarded as being unique and exceptional. Nature's laws in the two hemispheres, east and west, were held to be dissimilar, and consequently the relation, and consequence of cause and effect, were either reversed or incongruously complicated; lights and shadows alternating and intermingling, whilst the density of the latter blurred, if not entirely obscured, the unappreciated glimmerings of the former, so that the hackneyed truism, "where it is there it is," prevailed. And the sense of sight was regarded as the only guide and arbitrator to multitudes of men in their heroic grappling with Nature in her most obscure and comparatively impregnable stronghold in wresting from her rock-bound recesses the exclusive material wealth on which the progress of science, the arts, and civilisation, with its numberless conveniences and comforts depend. But there is light, landmarks, and finger-posts in this comparatively obscure realm of Nature, hieroglyphic though they may be, teaching by symbols instead of orally, yet its language is no less intelligible and authentic, convincing and instructive to those whose study it has been to divine and interpret its suggestive meanings. Experience directs and leads to this, and hence the ephemeral yield, and give place to more elaborate practical proceedings, directed by a correct rational philosophy. The field widens, broadens, and deepens instead of contracting, whilst a light shines out of the darkness previously obscured by prejudice and ignorance, and more comprehensive rational theories consonant with science, practical experience, and abstract truth are formulated, popularised, and practised. It has begun to be seen that certain superficial metalliferous occurrences are merely the effects of revolutionary eruptions, or the indices of abounding subjacent wealth, which practical skill, aided by scientific instrumentalities, mechanical and otherwise, is fully adequate to explore, develop, and extract. It is to this second, but not advanced, stage of mining that local attention is now being directed, and to which I would invite the attention of English capitalists and investors generally. The country has been run over in hot haste by enterprising prospectors in quest of ready-made fortunes, and actuated by such a mania nothing but the immediately available wealth of the superficial deposits were recognised by them as of value; consequently most of the best districts of this State and coast are undeveloped, and easily procurable by those possessing the necessary knowledge and means of working them. A rich harvest of results awaits such enterprises. But we live in fast times; not one in which patience is permitted to survive the limit of her prudent exercise, but one in which she has no recognition of having any vocation or office whatever, a condition which I need scarcely add is wholly

adverse to thorough practical legitimate mining, but which has favoured the advent and popularity of bubble schemes and sensational enterprises, the deplorable results of which too many, whose intelligence and judgment if appealed to ought to have taught them better, can bear sorrowful personal testimony to. If the dictum be true that "experience teaches fools," ought not wise men also to profit something by its lessons?

ROBT. KNAPP.

*Ellsworth, Nye County, Nevada, Feb. 10.*

#### EUREKA (NEVADA) SILVER MINING COMPANY.

SIR.—Many shareholders who, like me, have patiently waited for good news from the mines will, if my information is correct, be speedily rewarded for their patience. The last weekly reports officially issued from the mines are quite sufficiently favourable; but from what has oozed out at Eureka it seems pretty certain that the last discoveries made in the Bald Eagle more than justified the directors in their statements in the prospectus, and Mr. Reuben Rickard in the very favourable opinion of the mine he expressed in his report. That ore has been struck close to where the rich ore was found which the Richmond Company bought many shareholders will know, but that the last discoveries point with almost absolute certainty to the existence of a large ore chamber, which may be reached at almost any moment, is known, it appears, to only very few people; that it is known to some would appear from rather pressing invitations a few shareholders have received to name a price for their shares, the applicants at the same time trying to depreciate the shares in the eyes of the owners.

My reply has been that as the persons wishing to buy have such a poor opinion of their proposed purchase, I should prefer keeping it till they have had time to change their opinion; and knowing what I do know I cannot do better than advise my fellow shareholders to follow a similar course. Let them consider that these are not untried mines, but that a few ignorant miners extracted in a short time nearly 10,000*l.* worth of ore from one of them, with scarcely any working capital, that the other has yielded nearly 40,000*l.* worth of ore, that they are now being regularly worked under the superintendence of one of the greatest authorities in the United States, that the whole capital issued for the purchase and development of the mines is under 50,000*l.*, that, therefore, only a small sum will be requisite to pay a handsome dividend and to send the shares far above par, and the reason for my advice is not far to seek.

INVESTOR.

P.S.—That the Williamsburg is now raising ore every week, and selling it, is, I presume, known to shareholders.

#### THE SANTA CRUZ MINING COMPANY.

SIR.—In the Supplement to last week's Journal I notice a letter subscribed "A Shareholder" in which my name is mentioned in connection with the above-named mine. I should not have thought of noticing an anonymous letter were it not for the ungentlemanly—may I not say the insulting—language which the writer was pleased to employ. My letter in allusion to the meeting which took place two or three weeks ago seems to have stirred the gentleman's choler. Why I know not. What was stated at the meeting relative to the lode was something like the following:—"We were told that the angle of the lode was 47°, but the fact is that it is not the case. A slide came down and threw the lode of mineral in a different direction. This threw dust in the eyes of the directors." That the lode according to report should have had an angle of 47° was simply the statement. Nothing whatever was said as to the relation which the said angle bore to any other angle, point, or direction; whether to the vertical, the horizontal, the zenith, the nadir, or to the antipodes, and this omission was the sole cause of my saying that the "expression was unintelligible." This I venture to repeat, and were "Shareholder" at all acquainted with the subject he might have seen and known that anyone must have had the greatest reason to make the remark that I made—nay, to ridicule such a want of intelligence. I have not been practically engaged all my life, even from childhood, in all kinds of metallic mining in so many parts of the world without knowing that under certain conditions and circumstances importance may be, and should be attached to the angle of a lode. But then that angle can be explained, or described and understood, only in connection with or reference to some other point or angle, and had this been stated no remark would have been made by me. I presume that "Shareholder" has not made friends with Euclid. Even had I never seen a mine, as "Shareholder" seems to insinuate, the little acquaintance that I have had with that gentleman would at all events have instructed me to describe an angle somewhat more clearly and intelligibly than it was described at the meeting. I finish with this, adding only that I venture to give "Shareholder" something of the kind of advice which he was pleased gratuitously to give me—that he cease to write until he better understands the matter on which he employs his pen.

JOHN LEAN.

*Feb. 28.*

#### THE OLATHE SILVER MINING COMPANY.

SIR.—The attention of the directors has been called to the paragraphs appearing in last week's Journal, wherein you again refer to comments in certain Leadville papers affecting not only the property of this company but also those connected with it. In my letter of Feb. 3, which appeared in the Journal of Feb. 4, I pointed out to you the gross inaccuracies of the previous statements quoted by you from two of these Leadville papers, and I have now to ask that you will give me your authority for the statements which appeared in last week's Journal, in order that the board may take such steps as they may be advised as necessary for putting an end to these slanderous statements.

HENRY KENDRICK, Secretary.

*Tokenhouse-yard, Feb. 24.*

[The directors should certainly be as familiar as we with the statements which have been published in the Leadville Herald, Leadville Democrat, Leadville Chronicle, and Leadville Circular (see the files of those papers a month since), and which were referred to in last week's *Mining Journal*—these being the leading newspapers in the camp in which their property is situated. We have hastened to give currency to the detailed reports which have been forwarded to us, as we considered that some authentic refutation of them would have been offered by the directors in order to dispel the opinion that might have been entertained by shareholders as to the rumours being justifiable. It is much to be hoped that the American writers were in great part influenced by personal feelings, but the statements having been so widely circulated they should be as publicly refuted, and as far as we are concerned we shall be glad to afford reasonable space for the refutation.]

#### THE COMING GOLD FIELDS.

SIR—I am glad to see that a correspondent is ventilating the question of the Gold Coast becoming, at no distant date, a very important factor in our gold supply. Your Journal of January 10th is now to hand, and I should be glad of the opportunity, through you, of thanking Mr. Gabbott for the letters referred to, and of correcting a few errors he has naturally fallen into. The rains are not over in September, but in November—this year they are hardly over yet. The winter (though we never use the term) is not from October to March. This is the dry season, and usually lasts to the middle of May, and is our hottest time. Such a temperature as 50°, or even 60°, has never been recorded by any one at Axim, and never will be until the Glacial period returns. We who have spent the best part of our working lives in Africa usually know more about it and its climate than the traveller who flits across, or the occasional visitor who comes for a few weeks for some object, and then returns.

With regard to the climate, with proper selection of persons to send out, and with a thoroughly experienced manager, life may not only be maintained, but "be worth living." The selection of people, of course, rests with those at home, and no greater error can be made than to send that nomad who has "knocked about all over the world;" and who, in the opinion of most Boards, is the exact man to send—because he is hardened to tropical climates. This type, unless sent home at an early date for other than climatic reasons, seldom returns. The man who at home is all bragg and bluster, out here breaks like a dry reed when the pinch comes. Send men who have never been out of England before, from 30 to 40 years of age—steady men of sound constitutions. But better still, let a man of long African experience select the men. If such a

staff be properly managed, fed, and housed, they will have as good a chance as any of us are likely to get to whom work is a necessity.

Abbontuyakoon, Jan. 19, H. C. CRISWICK,  
Manager Gold Coast Mining Co.

#### NEILGHERRY GOLD MINING SYNDICATE.

SIR.—I am a shareholder in this enterprise, which was floated about two years since. Up to the present nothing whatever to the point is known about how it stands. Mr. Morton, the secretary, has written to say the syndicate has invested 1000*l.* in the Cherambadi gold mine and sold the property purchased in India to Mr. Black for 30,000*l.*, 15,000*l.* still remaining unpaid, for which the shareholders, according to the number of their shares, were to receive a like number in the Simons Reef, to be paid off at par by Mr. Black on receiving funds from the Simons Reef corporation.

Now all this is very fine, but why has not the 15,000*l.* been paid by the syndicate to the shareholders and let the other abide its time. Any information from any one will much oblige one who has already lost some 500*l.* in Indian mines.

[Suum cuique.

#### MOLYBDENUM, AND ITS SALTS.

SIR.—Replying to the enquiry of "J. G. E." in last week's Journal, the deposit in question is, probably, a sulphuret, as this metal does not exist in a native state. There are several sulphures Mo S<sub>4</sub>; Mo S<sub>3</sub>; Mo S<sub>2</sub>, beside PbO Mo O<sub>3</sub>. They are not so rare at all; in fact, almost all granite, syenite, chlorite slate, gneiss, and glimmer, &c., have them in ore form, but the deposits are not large—i.e., there may be tons and tons, as in Tyrol and Bohemia, where they occur in quartz, but never sufficient to look only for them.

There are several minerals with which they might be mistaken. Their use is restricted, and they are mostly used in polishing steel and ironware. If "J. G. E." will forward a handy sample, and state the quantity you could sell, I will make an offer.

C. G. JUNG.

*Coblenz am Rhein, Feb. 28.*

#### SOUTH AUSTRALIAN COPPER COMPANY.

SIR.—We now continue to get a regular, though stunted, report of the workings so far, being supplemented in a degree by your correspondent of Adelaide, Mr. Austin. We are, therefore, supposed to be a little more enlightened as to our property. And if we also take the remarks made by the Chairman of the English and Australian Company at their meeting this week we can honestly say we are further enlightened, contrasting the information he gives his shareholders as regards our property this year with last, and the hopes then held out to them as to the anticipated returns from our mines, the shareholders must have felt that there had surely been some dilatoriness in the development of our company's property. I am afraid that there must be some reason for such thoughts, and certainly looking at the matter in the lights shed forth from their Chairman's remarks it would almost point to the moral that this was so, against what might have been accomplished if a vigorous working had gone on, as it should have been. It is, therefore, to be hoped that the promised report will soon be in our hands. As there is need of much information and light concerning what is done so far the stunted reports are too vague and short to give me any knowledge of what is really being done, or what result can be anticipated.

Leith, Feb. 28.

A SHAREHOLDER.

#### ABRAM COLLIERY EXPLOSION.

SIR.—In a recent Journal containing the particulars of the inquest in connection with the above Mr. John Higson is reported to state his evidence as follows:—"I have 3000 Mueseler lamps under my charge. I have not any instance where there has been a hole in the glass, but I do know instances where the glass has been cracked, and then, although we call it unsafe and take it out, it is perfectly safe." In consequence of many enquiries, we find the impression conveyed was that the lamps referred to were the ordinary oil Belgium Mueseler. We are authorised by Mr. Higson to state that the whole of the 3000 Mueseler lamps referred to are of the "Protector" type. The construction of this lamp not only gives safety as regards the top portion, but greatly improved light, together with a means of securing the light so that it cannot be tampered with, being self-extinguishing in attempting to open the lamp, or when placed in an atmosphere of explosive gas. I claim your indulgence for the insertion of this in next week's Journal.

HENRY HUFFAND, Secretary.  
*Sinsley Mill, Worsley, near Manchester, March 2.*

#### VALUE OF MINES, AND MINING COMPANIES.

SIR.—For some unaccountable reason I did not get the *Mining Journal* of Feb. 11 until Feb. 23, and consequently had no opportunity to observe earlier that the words in brackets [the company was withdrawn a few days after the prospectus was issued, and all deposits returned in full] formed no part of my letter, which was published in the *Journal* of Feb. 11, but were obviously an Editorial note. It is now an opportune moment to draw attention to the fact that considering the great amount of injury which has resulted to England in the past consequent upon reckless speculation, failure of public companies and the general panic in trade which ensued, occasioning the utter ruin of thousands of persons, it is highly desirable that the public should possess means of employing some safeguard by which to determine in a more accurate degree whether or not contributions should be made to this or that public scheme presented on any occasion. The documents issued by company makers from time to time generally contain sufficient information to enable practical engineers and those skilled in matters of finance to discover the value of such projects, and also if they are worthy of support, but the general subscribing public cannot be considered to occupy such a favourable position, consequently the well represented picture set forth in published documents creating the idea of sudden and great gain is too frequently sufficient to draw largely upon the public purse. By these remarks it is not meant to infer that the engineers and directors of many public companies are not respectable and well meaning, such an assumption would be an abuse of privilege, and it is desirable to avoid everything of that nature in discussing the question of the value of mines and doings of public companies, nevertheless we all know that the most respectable party to be found is not at all times infallible. It, therefore, follows that a mining scheme may be brought forward at a particular time in the full belief that it is *bona fide* and worthy of public support, but in years afterwards when such schemes have received full development, it has been found, and will again be found, an illusory affair altogether, and for some reason or another dividends to the shareholders are out of the question. It will thus appear that something more is required than mere belief in the *bona fides* of any scheme, even when that belief is exercised by engineers of respectability and long standing. Occasionally the old story of winding up a concern with the loss of the whole of the capital subscribed by shareholders is heard, and still the country goes on investing its millions annually in mining speculation, and when once the spirit of excitement has been created it is much to be feared that schemes which are not *bona fide* are thrust upon the public.

Any one who has studied the subject thoroughly may easily be convinced that the present law regulating public companies is altogether inadequate, as it places too much power in the hands of directors, some of whom, on particular occasions, are not only the hunters up of a mine, but the engineers and managers as well, which, in my opinion, is not in keeping or for the benefit of any such company. There is an opinion abroad that when it is proposed to float a public company, and before any money is spent, the directors should obtain unbiased reports upon any property in question from *bona fide* parties, outside every possible interest in the proposed scheme; but where or how to draw the line, so as to cut short such interest, would prove a most difficult task. No doubt such a plan may be made to work well in a few particular cases, but where there is a tendency to bring forward a scheme not exactly sound, or perhaps altogether worthless, it would utterly fail, simply because parties then, as now, could always be found to work so as to effect any

particular purpose; and, therefore, we should come back to the same state of things, of which the public has had plenty of experience. One of the most practical and effectual modes which could be introduced would be to constitute the whole body of shareholders a distinct board from the usual directors' board, for the purpose of ascertaining by independent means, in the first place, whether or not any particular mining scheme or other public project justifies the amount of capital to be expended in it or them before a single shilling was spent upon purchase or development of the mines; and, second, such board should have powers of control over every shilling to be spent hereafter upon any such concern. The usual board of directors would thus be checked, and would have power to do nothing without the second board, which finds the money, is in complete accord. I do not at present intend going into this subject in detail, but it is highly probable that it would work well; but as a matter of consequence the law as it stands must be altered to suit the new condition of things. I am quite of opinion that, under such new regulations, many proposed public companies would fall to the ground when the board of shareholders caused the real value of any proposed scheme to be determined. On the contrary, the few concerns capable of passing the ordeal would succeed so far as human wisdom and honesty of purpose could ensure. I quite anticipate that there would be a host of opponents to this new scheme, but if such were to be the case it is probable that their reasons for so doing could be easily explained.

*Santander, Spain, Feb. 25.*

MINING AND CIVIL ENGINEER.

#### BOSTON AS AN IMPORTANT COAL AND WOOD PORT.

SIR.—With reference to my letter in last week's Journal, permit me to state that the circumstance which raised Boston from extreme insignificance, in a commercial point of view, at the date of the Norman Conquest, to its high importance as a shipping port and place of business in 1205, increasing the trade until Boston paid twice as much duty upon the great articles of export of the period (1281) as London did, and even more than one-third of the entire duty paid by the whole kingdom during the decimal period 1279-1288, sustaining the town as a great, wealthy, and prosperous commercial emporium until nearly the end of the fourteenth century, was its geographical position. Such is the preponderating advantage of Boston in the nineteenth century over the divers Humber and Wash ports that it is inconceivable the apathy that pervades the inhabitants of this, by Nature, highly favoured port. How in the interest of the entire community is it that similar measures are not resorted to as in other localities, which have been crowned with indubitable success? To meet the preliminary expenses of any grand onward movement meetings were convened of the inhabitants to raise the requisite preliminary funds. Land and house property in Boston will be greatly benefited, taxes diminished, the deplorable penury of the working classes ameliorated if not annihilated, and the general well-being of all classes raised to its proper level. Take, for instance, the Tyne, where a Grantham man played an important rôle. If the Bostonians wish to rise Phoenix-like from their ashes they must put their shoulders to the wheel, mindful of the well-known adage "Aide-toi le Ciel t'aidera." The consensus of opinion of all practical men is that Boston with ordinary energy can command an enormous export trade to the Baltic and abroad generally, simultaneously with a vast importation of wood, grain, &c. I do not opine that many of the inhabitants buoy themselves with the idea that the King's Cross Company will give any assistance to the amelioration of the long existing state of affairs, as they have given ample proof of having deserted the Witham, for which they have been justly required by an enormous loss at Sutton Bridge Dock.

I forbear allusion to the various ramifications of this strange affair. May it be a lesson to better men than them, and may they derive instruction from experience of history, the monitor of life. Boston can convey coal from the pitmouth to on board ship at £1. 6d. per ton. Coal, including railway toll, locomotive power, wagon hire, and all expenses of whatever nature; interest, 5 per cent. per annum, and dividend 10 per cent. This is by no means a hypothetical assertion, but based on strict railway law and practical data, so that a limited company would convey, by means of their own locomotives and wagons, coals from the pits to Boston, and wood and grain in return, over the Great Northern and other systems, which cannot be hindered, at a mere toll for passing over their permanent way. It remains, therefore, for Boston, temporarily only, to tax themselves, similar to what has been successfully done elsewhere, towards the initiative steps. If public spirit be so far defunct in Boston that there exists a total oblivion of the imperious necessity of the action of the entire community to triumph over the insurmountable difficulties of partial individual efforts, it is in vain to expect Boston will ever emerge from her comparatively lamentable state. But there are not wanting men in Boston endowed with eminent mental ability, capable of leading, through their diversified experience, the most enlightened community, which inspires me with the confidence that the super-eminent geographical produce of Boston will not be allowed longer to remain neglected.

*20, Little Tower-street, March 1.*

W. J. THOMPSON.

#### INSTITUTE OF CHARTERED ACCOUNTANTS IN ENGLAND AND WALES.

SIR.—One of your correspondents wanted some information on the above-named Institute and its constitution. I send a few facts that may be useful to him and others. The Institute is not registered under the Companies Act, but incorporated by Royal Charter, dated from Westminster Palace, May 11, 1880. Previous to this date the Public Accountants for England and Wales were for the most part members of one of the following societies:—The Institute of Accountants, London, The Society of Accountants in England, The Incorporated Society of Liverpool Accountants, The Manchester Institute of Accountants, and The Sheffield Institute of Accountants. All these societies are now incorporated into the Institute of Chartered Accountants in England and Wales.

The aim of the Institute, as set forth in the petition praying for the charter, is as follows:—"The elevation of the profession of public accountants as a whole, and the promotion of their efficiency and usefulness by compelling the observance of strict rules of conduct as a condition of membership, and by setting up a high standard of professional and general education and knowledge and otherwise," it being considered that "such incorporation would be a public recognition of the importance of the profession, and would tend to gradually raise its character, and thus secure for the community the existence of a class of persons well qualified to be employed in the responsible and difficult duties often devolving on public accountants," particularly "in respect of their employment in the capacities of liquidators acting in the winding up of companies, and of receivers under decrees, and of trustees in bankruptcies, or arrangements with creditors, and in various positions of trusts under courts of justice, as also in auditing of the accounts of public companies, and of partnerships or otherwise."

The members of the Institute consist of Fellows and Associates. To become a Fellow it is necessary (1) to have been in practice as a public accountant on Jan. 1, 1879, and thence up to the time of applying to be admitted as at the time of so applying been continually in practice as a public accountant for five years. 2. Every person who being an Associate of the Institute for five years next before the time of his applying to be admitted a Fellow has been continuously in practice as a public accountant. As an Associate the qualifications are—1. Every person who obtains a certificate of his having passed the final examination provided for in the charter.—2. Every person who before the date of the charter obtained a certificate of having passed the final examination required by the rules of any of the five societies.—3. Every person who three years next before the date of the charter, and thence up to the time of applying to be admitted, has been continuously in practice as a public accountant.—4. Every person who for five years next before the date of the charter, and up to the time of application, has during part of that time been in practice as a public accountant, and during the residue served as a public accountant's clerk, or has during the whole of that time served as a public accountant's clerk. The examinations above referred to are to be of "such a character

as to test the knowledge of the candidates, not only in book-keeping and accounts but also in the principles of mercantile law and practice of bankruptcy, and of the winding up of companies."

The present governing body of the Institute consists of a council of 45 members, of whom Mr. William Turquand is president, and Mr. R. P. Harding vice-president. The secretary is Mr. W. G. Howgrave, and the offices 3, Copthall Buildings, London. The first published list of members contains the names of 441 Fellows entitled to use the initials F.C.A., and 584 Associates entitled to use the initials A.C.A. This number has I believe been about doubled since the issue of the first list.

The members of the Institute are to be found in all parts of the kingdom. Besides the Metropolis 130 provincial towns contribute to the list. Nor is the list confined wholly to England and Wales. Edinburgh, Glasgow, Dublin, Calcutta, and Melbourne have each members residing in them. The entrance fee and annual subscription, except in the case of members of the five before-mentioned societies, is as follows:—Fellows: 21*l.* entrance; 5*l.* 5*s.* annual. Associates: 10*l.* 10*s.* entrance, and 2*l.* 2*s.* annual. To members outside the Metropolis the annual subscription is reduced—3*l.* 3*s.* Fellows, and 1*l.* 1*s.* Associates.

When the relationship accountants have to public companies is considered, a society such as the above is absolutely required, and considering further the number of mining companies registered year by year, mining must also have a great interest in the matter. In 1881, 217 companies were registered for working mines. No other branch of industry registered so many. In every instance an accountant must be required in one form or another—if they succeed in their work, as auditors and constructors of balance-sheets; or if they fail, as liquidators. The object of the Institute is to provide a body of men suitable for such work, whose ability and public character, so far as practicable, has been efficiently tested.

A FELLOW.

#### IRELAND—THE PEAT BOGS—CAN THEY BE UTILISED?

SIR.—Ireland being an essentially agricultural country—her boundless mineral wealth being undeveloped, and the population being entirely dependent on agricultural resources for a livelihood—has led to what is commonly called "land hunger," from which and owing to the intense anxiety and desire of the people for a "bit of ground" on which to exist, we may trace the origin of most of the crimes and outrages in this country; for it is clear to those who know the people that recent disturbances are altogether of an agrarian character, and that there is no more danger to the life and capital of strangers coming into this country than in England. We have a "Land Bill," and have had sundry "Messages of Peace." We have, also, 174,000 farms in this country, rated at the Poor Law Valuation at 4*l.* a year and under. Now, if the occupiers of these farms held them in "fee simple" they could not live by them. How, then, can they pay rent? In what way can a "Land Bill" possibly benefit them? Those 174,000 farms represent at least a million of human beings, who are always on the verge of starvation. Does the "New Land Bill" contemplate making "peasant proprietors" of these poor people? The people are willing and able to work, but they cannot get it? In travelling through the country the eye rests on dreary wastes and peat bogs in all directions, extending probably over millions of acres. The important question, therefore, arises—Can these peat bogs be utilised? I have seen numerous ingenious processes introduced, but invariably the cost of production exceeded the value of the manufactured article. What is, therefore, required is a plan to make the working of the peat bogs of this country a profitable investment for capital? This can be done by a simple, speedy, and inexpensive process, and the peat, when intermixed with a mineral substance (for a basis), which also is a natural product of this country, makes an invaluable and highly fertilising manure for land. No complicated or expensive machinery is required, and I am certain, from long and careful practical experiments, that the peat bogs will yet prove to be a "mine of gold" in Ireland. While the bogs are being cut away and utilised the sub-stratum would be broken up, and by the fertilising powers of "peat manure" converted into arable and pasture lands, and what is now a dreary waste become clothed with grass and smiling fields of corn, adding tens of thousands of acres of valuable land to the country, and giving profitable employment to thousands of workmen.

*Coosheen Mine, Schull, County Cork, Feb. 27.*

#### THE GREAT WHEAL VOR DISTRICT.

SIR.—There is nothing like setting the stamps to work; the very sound of them is music to an old miner. He knows you investing gentlemen in London and elsewhere like to see something for your money, and that as soon as the tinstuff is stamped, and the metal in the market, a revenue—and it may be a profit—is in sight. I have been patiently waiting for several weeks to see what the stamps would do for this district, and as they are now at work I went round the other day, and saw a sample from Great East Vor. It was a first-class sample, and the yield enormous, beyond all experience at so shallow a depth. I suppose in a few days we shall know what is the actual produce both in quantity and value, and then I hope we may all rejoice over the rehabilitated fortunes of this historic ground. I told you some time ago this of Great East Vor and New Great Wheal Vor. The former would, perhaps, turn out the greater wonder of the two. It does turn out so in some respects, because the works were not commenced there for some months after the opening at New Great Wheal Vor, and yet Great East Vor will have the first in the market. I hear that at this mine the entire cost so far does not amount to 100*l.*, and that the first sampling in a few days will probably bring 400*l.* Besides the strength and richness of the lode so near the surface is altogether unprecedented. The miners say they have never seen anything like it, except at a depth of 100 or 200 fathoms, and very seldom even at that depth. New Great Wheal Vor is also remarkable in this respect, but not quite so much so as the neighbouring mine. New Wheal Vor, however, if comparatively slow is not slow actually. Its progress has been astounding. Here an enormous quantity of tinstuff lies on the open ground, having been brought up from a depth of a few fathoms only. The stamping of this tinstuff will be commenced immediately, and, indeed, it has been delayed only because of topographical consideration and minor points of detail. I watched these developments with peculiar interest, and shall take care to keep you and your readers well advised of all that takes place.

*Helston, March 2.*

#### THE CALLINGTON DISTRICT AND ITS MINES.

SIR.—I have just paid a visit to the Coumbe arsenic works, when Mr. Hammersley, the manager, kindly put me through the whole of their establishment, commencing at the cooper's shop, where four cooperers were busy at work. My next object was to ascertain what they intended doing with all their barrels; but by going into the refining house that was quickly answered, without asking any questions, by the men speedily filling them. We next went to the furnaces, where they were burning their muriatic acid to make crude arsenic; then to the floors, where there were two carts bringing copper and other muriatic acids to be prepared for barreling. I found the erections for the precipitate works were not quite finished, but everything else appeared to be what it should be. I next visited Wheal Fortune, which is only about three furlongs distant, where I could distinctly see in was from there that Mr. Hammersley was getting his best copper and other muriatic acid. Mr. Downing, the manager, was able to show me a large quantity of precisely the same kind as I had just seen, and he is now able from his output to pay the whole cost of the mine and put by something to the reserve fund. The blast furnace, to bring the low percentage silver stuff into matte or regulus is not set to work, as there is a delay from the foundry for the supply of a few fittings for the completion, after which no doubt they will be able to add considerably to the reserve fund, without the discovery of another deposit of silver ore, which they may do at any day. At Wheal Langford they are getting on as fast as the nature of the work will admit, and both the engines are being brought on as fast as possible. I thought a short time since that all the ground in this district was under grant, but I now find there

is a piece of ground situated between Wheal Langford and Wheal Fortune which is not. There is an adit to it and there has been large quantities of silver returned, and no doubt large quantities might still be found by prosecuting the same adit level. It has not been worked since it has been in possession of the present owner.

*Callington, March 2.*

JNO. BUCKINGHAM.

#### CALLINGTON CONSOLS.

SIR.—This company was started about 12 months since. "A promising lode" was soon struck, and prospects were considered bright. For many months past we have been favoured with nothing more satisfying than "call letters," the last of which for 10*s.* will place the whole capital of 50,000*l.* into the coffers of the directors. It would, I am sure, be interesting to many of the shareholders, as well as myself, to know what results are flowing from this rapid use of means. Perhaps some of your readers, the directors themselves, or Mr. George Henwood, "one of the oldest and most competent mining authorities of the day," could enlighten us on the subject. Trusting you will find room in the *Mining Journal* for this enquiry. G. M.

#### DEVON GREAT CONSOLS.

SIR.—I see nothing in the further reference to Devon Great Consols in this week's Journal to materially affect the views expressed in my previous letter. It is of course easy to quote figures in support of an assertion that these shares are at an enormous premium, and, on the other hand, it is just as easy to show that these figures are not to be relied on. But what has the original capital subscribed for such mines as South Cadron, East Pool, or Devon Consols (to mention these only) to do with the present value of their shares? The capital so subscribed, as everyone knows, has been increased many times over by undivided profits laid out in the purchase of plant, &c., in the erection of buildings, and all the multifarious adjuncts of an extensive mine, and is practically a letter so far as it bears on the producing power of these properties. Its main use now being to determine the share of such profits as are returned in the shape of dividends. It is plain, then, that another basis must be made to ascertain the value (as distinct from the price) of such shares as these; and how, may I ask, can their value be reckoned but by some such plan as that I ventured to indicate. The figures of the "fanciful calculations" which one writer is pleased to deride were compiled from the company's report, and another correspondent in this week's Journal, who probably knows what he is talking about, avers that they are now far below the mark.

Unfortunately for the well-being of mining as an industry, the practice of estimating the value of a mine by its nominal capital is far too common, shareholders apparently caring little whether they have something tangible for their outlay, or whether their property is represented, like a traditional Yankee mine, by some share certificates in town and a big hole and dead mule in the country. But which class of "sanguine adventurers" usually receive such rude awakenings?

A DEVON CONSOLS SHAREHOLDER.

*Westbourne Park, Feb. 28.*

#### SOUTH DOLCOATH.

SIR.—In the Journal of Feb. 4 a few remarks appeared bearing on the position and prospects of this mine. Although the lodes at that date were only just cut into the energetic manager has already a pile of ore preparing for the market. It will, doubtless, interest the shareholders in this mine to know that during the last working the lodes that are now being worked on produced ore to the value of 40*l.* per ton, and the grey ore now being raised is quite as rich as any the mine ever produced. The mine being shallow, and the cost of working very light, the shareholders may congratulate themselves on having a property of no mean character.

I understand that very shortly the manager will be turning his attention to the great tin lode traversing the sett. This lode in the neighbouring mine (Cook's Kitchen) yielded large quantities of rich tin-stone, and, being in the same channel of ground as South Dolcoath, similar results are, of course, expected. Local interest is just now intently fixed on the results of going through the western cross-course. The lode at this point was highly productive, and similar results are almost certain on the other side. Shareholders will, therefore, do well to await the results of this and one or two other points that will shortly come off.

CARN BREA.

*Redruth, Feb. 27.*

#### WEST LISBURNE.

SIR.—It is refreshing to read such a satisfactory "special report" upon this splendid property as that which appeared in last Saturday's Journal, and I am certain the whole body of shareholders must be thoroughly satisfied with their investment. Now that the mine has been forked to the 36*f.* large available stoping ground laid open in depth, and lead ore ready to be raised at once, this mine must assume an important position in the mining market, and it may be as well for those who have not hitherto paid much attention to it to give it an occasional thought, or else some fine morning they may awake up to find that they have neglected one of those rare chances which sometimes occur in mining, and the price of their neglect may be measured by the price of the shares.

*London, March 2.*

LYNX.

SUCCESSFUL RESUSCITATION OF MINING IN THE GREAT WHEAL VOR DISTRICT—IMPORTANT DISCOVERIES OF TIN, COPPER, AND ARSENIC AT THE WEST VOR AND LEEDS UNITED.—This district is again attracting an unusual amount of attention from capitalists, and is already beginning to be the chief centre of mining investment in West Cornwall. The result of the further development of these, as also Great East Vor, where, it is reported, extraordinary discoveries have also been made, will be watched with great interest by all concerned in the welfare of Cornish mining, as it is taken for granted that upon the completion of the necessary pumping machinery, to enable these companies to prosecute the sinking on the lodes on both of the grants, which are improving in depth, large dividends will accrue to the shareholders. The report of Capt. S. Harris on the West Vor, &c., who is proverbially one of the most cautious and conscientious mining experts in Cornwall, is most convincing and reassuring. He concludes by stating: "In addition to the tin and copper there is an extensive bed of arsenical muriatic, from which there would be no difficulty in producing 100 tons of good quality arsenic per month. This, with tin and copper, would give good profits from this lode alone;" and his views have been confirmed by such well-tried mining authorities as Capt. J. Thomas, of Dolcoath; Capt. Jenkins, Capt. Bawden, Capt. Rutter, Capt. Argall, and Capt. John Curtis, agent to the Duke of Leeds. It may be remarked that the public, in these times, require something more tangible than reports; but the fact of the lodes in this grant having already yielded tin and copper to the value of 120,000*l.* from the same lodes which traverse the adjoining Great Wheal Vor grant, which have yielded nearly 3,000,000*l.*, is looked upon as only the forerunner of equally as great, if not greater, results in depth. An incident is related as having occurred about 25 years ago, showing the perspicuity of the inhabitants of the Great Wheal Vor district. When Mr. Trueman, one of the late members for Helston, in appealing to his constituents for their support, they replied that if he resuscitated the working of the Great Wheal Vor, which at that time had been temporarily suspended, they would return him as their representative, which evoked his reply in the affirmative. He carried out his promise, and the result proved the correctness of their expectations, as, after operations had been resumed, the mine yielded, it is believed, a larger rate of profit than ever hitherto, and from that circumstance one of the most productive lodes in the district was christened "Trueman's." The feeling in the neighbourhood is equally as sanguine now about the West Vor, and some of the mining agents in the district have subscribed handsomely for shares in the company. One of the representatives of the oldest and most noble family in Cornwall has taken a considerable interest in the company, and is acting as trustee to the shareholders without the solicitation of his constituents, thereby showing himself a second Trueman to the interests of the mining community of the Wheal Vor district. The spirit of enterprise is indigenous to our nature, and few having the

blessings of health, vigour, and energy are satisfied to lend their money to the nation or banks at 3 or less than that per cent., and many millions are yearly invested at home and abroad in the expectation of receiving more than what is usually called the legitimate 5 per cent. Without that inherent spirit trade and commerce would become paralysed, and without it what would have become of our great railway system, telegraphs, banks, waterworks, mines, &c.; and when it can find vent in a legitimate way it will not be deterred, provided it has faith in those who lead and manage the undertakings. From no other investments or speculations have such large fortunes been made, and from no other properties can so large an interest on money invested be obtained by those who are carefully and honestly advised as in mining; and those who wish to discern between what is honest and what is otherwise is to pay no attention to "circular advisers," or to anything which is only recommended by intangible statements, but to note where facts and data are given, and where satisfied of honesty there to place confidence. The West Vor and Leeds United Mines, being located in the centre of the richest group of tin mines ever discovered in Cornwall, and having already made discoveries which may without exaggeration be called of great importance, holds out every inducement to the *bona fide* investor, who will be guaranteed good interest on his money; and no doubt exists in the minds of the competent judges who have foreseen in these matters that the further development of the lodes will follow the same wake as its illustrious neighbour, and under somewhat analogous circumstances.

## REPORT FROM CORNWALL.

*March 2.*—There is a steady if somewhat slow improvement in the general condition of mining in the West, not confined to one branch or one locality, but manifest in varying degree all round. We shall be very much mistaken if the month in which we have now entered does not show a well marked and settled change for the better. The elements which have disturbed us seem passing away, and it is quite certain that the merely speculative features of mining enterprise and more especially those connected with the metal market, have less permanent influence than was the case twelve months or two years since. Legitimate business has now gained such a settled magnitude that it has a very much greater regulating power than heretofore, and displays much greater readiness in the removal of the casual hindrances to the free course of commerce and enterprise.

Railway matters and schemes are engaging a good deal of attention just now in Cornwall and in the adjoining Devon district, particularly in relation to the new bills before Parliament, which have already been set forth in detail in these reports, and in respect of which there is much conflicting opinion. Opposition in some form or another is being offered to all the local measures—in some cases more formal than pronounced, but in regard to the rival prospects for linking on Tavistock with the Hinstone Down and Callington district a true war to the knife. Whatever comes of the various proposals themselves it is certain that the mineral interests of the West must be advantaged by the display and results of so much activity. This will be the case with other schemes which have long passed their critical stage—in a minor degree with the Dartmoor railway now in process of construction from Yelverton on the Plymouth and Tavistock branch to Prince Town, and in a far greater degree with the new railway to Helston, the inaugaurative ceremonial in connection with the commencement of which is to be held next week. Mining in the Helston district is but the merest shadow of its ancient importance, but we are very much mistaken if this new and most important aid to development, when completed, will not lead to a gratifying revival. In fact it must have this effect. The most gratifying circumstance, however, in connection with local railway enterprise is the fact that in the past half-year the Cornwall Railway has for the first time made a profit (2000*l.*) over and above the heavy amount required for its preference and debenture debt. Take the capital all round this line is now earning a fair rate of interest, but it is heavily handicapped by an excessive proportion of preferential changes, and by the fact of its lease for 1000 years to the Great Western, which prevents it making the best use of its very valuable through traffic. However, at length better days may be in store.

## REPORT FROM NORTH AND SOUTH STAFFORDSHIRE.

**March 2.**—The manufacturing coal trade manifests more activity than the domestic. Yet this is not saying a great deal, since the pits where the former description is raised could send to bank a much larger quantity than at present if there was the necessity. The Cannock Chase people, who are competing much with the old South Staffordshire district for ironworks custom, quote from 6s. up to 7s. and 7s. 6d. for forge coal at the pits, the last quotation being for best hard picked sorts. Domestic coal varies from 7s. up to 10s. per ton at pits. Staffordshire furnace coal is quoted 7s. 6d. to 9s., according to quality. Buyers of hematites in Wolverhampton yesterday, and in Birmingham this afternoon, tried to make use of the diminished strength which was manifested at the Barrow market on Monday to induce agents hereabout to accept their offers for hematites. But they met with only little success, agents still quoting 72s. 6d. to 75s. per ton, delivered in this district. Native all-mine pigs were priced at 3l. 10s. to 3l. 12s. 6d., but it is conjectured that offers to buy at 2s. 6d. per ton less than these figures would not generally have been refused. The chief feature in the finished iron trade was a decrease in the regularity with which specifications have been lately coming to hand. It is hoped, however, that this diminished activity will not be of long duration. Sheets were quoted at 8l. to 8l. 10s. for singles, 9l. 10s. for doubles, and 11l. for lattens. Bars ranged from 6l. 15s. up to 8l. 2s. 6d., the last figure being the quotation of the Earl of Dudley. Tin-plates were on the open market 20s. to 21s. for coke qualities, and 23s. to 25s. for charcoal.

The North Staffordshire Mining Institute held its annual meeting at Stoke-on-Trent, on Monday. It was announced that the present number of members was 289, and that the continued depression which had existed in all departments of mineral and commercial enterprise had reduced the annual receipts from 285*l.* to 204*l.* A paper was read on the subject of the dangerous character of coal dust; and the President for the ensuing year, Mr. John Brown, of Birmingham, in his inaugural address alluded to numerous subjects connected with mining, and suggested various enquiries which could be made from different parts of the country with a view of eliciting for members during the year information calculated to further the object of the Institute.

The adjourned meeting of coalowners has been held at Hanley, and a deputation from the men has attended in reference to an application for an advance in wages made a fortnight back. The consideration of the application had then been adjourned for the purpose of seeing whether any favourable change was likely to take place in the trade. It was now stated by several of the employers that since the previous meeting the demand both for coal and iron had fallen off rather than increased, and that it was, therefore, impossible to grant the concession sought. The deputation expressed their disappointment, and asked for a rise even of 5 per cent., but as they could not show that the representations of the employers were incor-

could not show that the representations of the employers were incorrect they were obliged to leave without having obtained any advance.

At Wednesbury on Monday Messrs. James and Lister Lea and Son, of Birmingham, offered for sale a number of valuable properties belonging to the Darlaston Coal and Iron Company. There was a large company. Lot 3 (a plot of freehold land containing 1 r. 32*p*, and including four upright furnace boilers, 14 puddling furnaces, condensing beam engine, 42 in. cylinder, 4 ft. 10 in. stroke, gasholder, purifiers and retort-house, steel converting furnace, steam saw, two mill furnaces, three firing boilers, &c.) sold for 3100*l*. Lot 4 (a plot of freehold land containing 12*a*. 1*r*. 8*p*, with the buildings, machinery, and effects thereon, including an extensive and substantially erected mill, together with condensing beam engine, 34 in. cylinder, 5-ton steam hammer, 12 puddling furnaces, two patent furnaces, two lumping fires, ball furnaces, three firing boilers, pumping-engine, weighing machine, water balance to wharf, &c.) sold for 3750*l*. Lot 6 (a plot of freehold land containing 1 acre, together with the buildings, erections, and effects thereon) sold for 425*l*.

Lot 7 (a plot of freehold land containing 5 a. 3 r. 29 p., with the buildings, machinery, and effects thereon, including the blast-furnace known as No. 1) sold for \$100. There were no bids for several of the properties offered. The total amount realised by the lots which were disposed of was \$21,050.

The annual meeting of the South Staffordshire Institute of Mining Engineers was held at Dudley on Monday. Mr. Farnworth was elected president of the Institute, and Mr. W. B. Collis vice-president. The president afterwards delivered an address, in which he spoke of the progress which had been made in mechanical engineering during the last half century, and expressed the opinion that the time was not far distant when electricity would be brought into practical use in mines for haulage and other purposes.

stocks of Cleveland iron have been reduced by 60,000 tons since the arrangement was entered into. During the same period the stocks in the Glasgow stores have increased by 40,000 tons, but it is found that makers' stocks in Scotland have been reduced, and the iron-masters there have fairly carried out the agreement made with the Cleveland masters. Now that this matter is settled it is expected that the price of iron will become firmer. It is stated that new steel works are to be started at Fighting Cocks, Darlington. At Middlesborough, on Tuesday, there was an improved feeling in the iron trade. There was an increased demand for pig-iron both at home and abroad; 1800 tons are now being shipped for America. There was little change in quotations, 42s. was got for No. 3. Messrs. Conna's stock of warrants is 171,376 tons, a decrease on the week of 1273 tons. The shipments last week nearly reached 17,000 tons. The shipments to France and Belgium have been very large. The prices of manufactured iron are well maintained.

REPORT FROM NORTH WALES, SALOP, AND CARDIGAN.  
March 2. The meetings have been held.

**March 2.**—There seems to be a renewal of slate quarry enterprise in the corner of Carmarthen and Pembroke where the slate quarries cluster around Whitland Abbey, and it is hoped that soon several of them will get into vigorous work. In North Wales the Glanrafon quarry, Carnarvonshire, is opening out magnificently, and Mr. R. Roger Williams is to be complimented on the way in which he has laid out the works. An equally good future is probably before the sister quarry, Clogwyn-y-gwyn. The works at the Foil Clynnog quarry are approaching completion. The slate quarries generally are working well. The Penrhyn sett quarries on the coast near Nevin are also, I hear, about to be worked vigorously, and they offer fine scope for vigorous working. The different railway schemes in Wales seem to have got over their standing order difficulties and are progressing. The Minera and Nuss Valley Railway is about to carry passengers, which it ought to have done long ago; and the Connahs Quay line is about to advance a further step towards the completeness of its first idea.

## TRADE OF THE TYNE AND WEAR.

**March 1.**—The steam coal trade, on the whole, continues rather dull on the north side of the Tyne, but there are signs of improvement, and when the Baltic trade is fairly opened out it is expected to resume its late animation. There is no change in prices, and this is not likely to occur, as the steam coal of this district is still comparatively low in price, and considerably lower than the Welsh steam coal. Steam small coal continues in good request, and must rise in price, as it is becoming more scarce daily. The Durham coal trade continues good, and most of the works in that county are fully employed. The shipments at Tyne Dock for the week amount to 100,000 tons. The gas coal trade is very strong, and there is also a good demand for second-class steam coal and for coal for manufacturing purposes. The coke trade also continues very good, and prices are very firm, with a rising tendency. The house coal trade continues rather flat, the extremely mild season having acted unfavourably on this branch of the trade. A special meeting of the Durham Miners' Association was held at Durham, on Saturday, under the presidency of Mr. John Foreman, when it was agreed by an almost unanimous vote to request the Federation Board to ask the coal-owners for advance of wages, believing, as they did, that trade at present fairly warranted this concession. The meeting also adopted a resolution expressing sympathy with the bereaved by the recent Trimdon Grange explosion.

Mr. George Leeman, of York, died on Saturday; he was well known, and an eminent man in the political and railway world. He invested in railways during the exciting times in 1844 and 1845. During the troublesome period of the North-Eastern systems Mr. Leeman led the movement which resulted in the fall of Mr. Hudson, the railway king of that day, and others. This was in 1849. In June, 1855, he was appointed deputy-Chairman of the North-Eastern Railway Company, and in 1874 he was, on the death of Mr. Thompson, appointed Chairman of that great company. He retired on account of ill health in 1880, when he was voted a pension of 1000*l.* per annum. Mr. Leeman also embarked in iron ore, mining, and smelting furnaces. About 1860 he leased extensive iron ore ground in Rosedale, Cleveland, and with other gentlemen opened extensive ore mines and quarries, and afterwards this company merged with extensive ironworks at Ferryhill. For a time great prosperity attended this undertaking, but the depression in the trade involved the firm in difficulties, and all the profits had vanished when Mr. Leeman retired a few years ago.

All the bodies of the men who suffered from the Trimdon Grange Colliery explosion have now been recovered, the workings have been opened out to some extent, and the ventilation partly restored; but a large number of the men are still actively engaged in removing debris, replacing the timber, &c. The pit is expected to be put into a working condition in the course of a few days. Mr. Thomas Bell, Inspector of Mines for South Durham, visited the Home Office last week at the request of the Home Secretary, and presented his report upon the disaster. The inquest will be reopened on March 29, and a gentleman will attend on behalf of the Government. It is supposed that there will be a collection of coal dust, and that Professor Abel, of the Woolwich Arsenal, will experiment upon it, as was done at Seaham. The whole of the men who were rescued are now doing well. The strike at Ushaw Moor Colliery has now continued nine weeks, but there are signs of its termination; new men are being gradually got to work the pit. Over 20 men are now employed, and the report for the past two weeks shows that 1232 tons of coal were raised during that time and a total of 95 men and boys are em-

The fire-brick and general fire-clay goods trades on these rivers continue in a prosperous state; considerable shipments have been made, and stocks are forming for the spring trade, which is expected to be exceptionally good this year. Fire-bricks, glazed and ornamental bricks, are now produced of very high quality; some classes of glazed bricks are sold at from 10*l.* to 30*l.* per thousand. On the Tyne business by water west of the Swing Bridge is gradually increasing, and the Swing Bridge is opened daily, and very frequently for large vessels up to the higher reaches of the Tyne.

The iron trade has been extremely flat during the week. The price of Scotch iron still influences to a considerable extent the price of Cleveland iron. Scotland consumes about 350,000 tons of Cleveland iron per annum. On the whole, however, the Cleveland iron has not fallen so much in price as the Scotch iron, and at the present moment the pig-iron trade is considered to be in a healthy state. The shipments of iron from this district have been only moderate of late. The arrangements for the reconstruction of the Darlington Iron Company (Limited) are progressing favourably; the capital required (£50,000*L*) will be easily raised in the present state of the trade. Manufactured iron of all kinds continues firm in price, but there is no change in the quotation. Ship-plates are 7*l*. 5*s.*, and other iron in proportion. Pig-iron is 4*l*. 6*d.* No. 3. Messrs. Bolckow and Vaughan have declared a dividend at the rate of 10 per cent. for the past half-year, which is very satisfactory. The Board of Arbitration held a meeting at Stockton on Monday to consider the wages question of the iron workers. Mr. William Whitwell, the President, presided. The men claim an advance of wages on the ground of improved trade, and, as they allege, increased prices. They ask for an advance of 1*l*. 6*d.* per ton for puddling and 15 per cent. on other branches, to take effect from Jan. 30 last. The employers' reply to this claim is that they have conceded 7*l* per cent. advance which expires on April 29 next, and gave more than the realised price of iron warranted. They agree to refer the men's claims to arbitration, as provided for by the resolution of the meeting of the Board of Arbitration held at Darlington on Feb. 6, 1882. The men desired to have a sole arbitrator, and after some discussion it was agreed to, and it was decided to ask the services of Sir Rupert Kettle, and if he accepts the post

to ask the services of Sir Rupert Kettle, and if he accepts the post both parties will have full confidence in his decision.

## REPORT FROM DERBYSHIRE AND YORKSHIRE.

**REPORT FROM DERBYSHIRE AND YORKSHIRE.**

March 2.—There has been very little change in the state of trade throughout the entire Midland district during the past week. The ironworks are doing well, the limitation of production agreed upon by the Cleveland and the Scotch ironmasters being most beneficial to those who are in no way connected with those two great producing centres. So long, therefore, as the output in the great producing centres is limited so long will the smaller ones be benefited. The consequence is that the makers of pig-iron in Derbyshire are now doing well, and prices are firm. A good deal of the iron is sent into Staffordshire for mill purposes, and it is found to be far superior to the Cleveland, as it contains a much larger percentage of metallic iron. The mills have been running well, especially as regards merchant iron. At Dronfield there has been no abatement in the production of steel and steel rails. In coal the trade in household qualities is still quiet, the weather being much against any expansion. Prices, too, are particularly low, so that the coal which is sold to the metropolitan consumer at 2*s.* per ton has been bought at the colliery from which it came at 8*s.* per ton, if not less. This, of course, leaves a good margin of profit to the merchant, whilst the colliery owner states that he barely clears himself. The open weather has been favourable to the steam coal trade, and of late a larger tonnage than usual for the time of year has been forwarded to Hull Grimsby, and Goole.

In Sheffield there has been but little change of late, pig and even hematite pig having come down in price. This, however, is likely to have occurred in consequence of consumers having purchased most extensively in the early part of the year, and with stocks in hand have been independent of the makers. Hematite pig is now sold to the Bessemer makers as low as 7ls. per ton. Bessemer rail makers continue as active as ever, and we are told that one order for 22,000<sup>t</sup>. for South America has just come to hand. America is also sending some fair orders, whilst the Great Northern and other of our home lines are also asking for specifications. Indeed there is every appearance that the steel rail trade during the whole of the year will be most active. The price, however, is not so good as might be expected, contracts being taken as low as from 6*l.* 2*s.* to 6*l.* 5*s.* per ton. The cutlery establishments are working well, and there is plenty doing in edge tools, files, saws, and in agricultural and garden tools. The coal trade of South Yorkshire continues quiet, the demand for household qualities gradually tapering off, and this is the case more especially as regards the London market. Steam coal, however, goes off well for the time of year, but prices have not got beyond the 6*s.* 6*d.* per ton rate, and in many instances 6*s.* and 6*s.* 3*d.* per ton are taken. Engine coal is in rather better request than it has been, and a brisk trade is being done in coke.

## TRADE IN SOUTH WALES.

*March 2.—At a meeting of the Sliding Scale Committee, held on the 27th ult. at the Royal Hotel, Cardiff, the accountants (Messrs. Routh, Kirk, and Co., Leeds) submitted the result of an inspection of the books for the four months ending December 31 last, which showed that prices did not justify a rise in the wage rate, and, therefore, the men will be paid on the same scale as before. The total rise since the lowest point was touched up to the present time has been 15 per cent. The discussion about the exhaustion of the coal supply has collapsed, since Mr. Hussey Vivian, M.P., stated that the amount westward of Bridgend was about 19,000,000,000 tons, and it is well known that there is at least the same amount to the eastward of that place. All this coal is at a moderate depth from the surface, but there are also larger quantities at greater depths. While on this subject it may be mentioned that the National Steam Coal Company have just struck a splendid seam of steam coal, 6 ft. thick, at their new pit, at a spot known as Cutsh (Nook), in the Lesser Rhondda Valley, about two miles above Port Station. One of the principal owners is Mr. Ebenezer Lewis, M.P., Maindee Hall, Maindee, Newport. The seam was struck at a depth of 420 yards from the surface and is known to geologists as the 4 ft. seam. Finding it in this part of the valley proves that the wealth of coal in the neighbourhood of Porth is inexhaustible. The constant occurrence of such facts as these shows that an accurate estimate of the amount of coal in South Wales is impossible, and that for all practical purposes it is inexhaustible.*

Mr. Matthew John, junior, of Merthyr, has just constructed and patented a new and improved "plunger" pump for use in collieries, which will shortly be erected in the Aberdare (Merthyr) Steam Coal Company's pit at Abercanaid. Owing to its simplicity of construction it will only be one-half the cost of the generality of pumps of this description. It is claimed by the inventor that he has so simplified the "plunger" pump as to give it greater power, reduce the working expenses, can be worked by an ordinary man, and is adaptable for deep working and heavy columns of water. The working parts have been reduced to four brass valves, so simplified in construction as to be impossible to get out of order by anything that may be drawn into it with the water. The brass valves are self-acting and floating. The plunger of the pump, of brass, is 9 in. in diameter, with a 2-ft. stroke, as a preventative against any class of water. Most of the leading scientific men have seen the new invention, and pronounce it a decided success, and a great improvement upon other machinery of the same kind, whilst the cost is one-half. Two other of these "plunger" pumps will shortly afterwards be erected in other collieries of the district.

The amount of steam coal sent away since last report from Cardiff has been 116,087 tons; Swansea, 29,578 tons; Newport, 26,112 tons. The trade is for the moment quiet, as arrears have at last been pulled up. The iron and steel trade is in about the same condition of steady activity. At Merthyr the wireworks company are proceeding with vigour. The bridge over the Taff is nearly completed, the tall chimney stack begins to assume shape, and a large amount of shedding has been erected. At Cyfartha the hitch on the commencement of operations is stated to be owing to the heavy demands of the royalty owners. A large amount of iron has been sent away during the week, principally from Newport, whence 5304 tons have been exported to New York, 1073 tons to Maccio, and 600 tons to San Francisco. Iron ore is coming in large quantities. At Cardiff 15,581 tons have been received from Bilbao, and 2415 tons from other places. The arrivals at Newport have been 13,270 tons from Bilbao, and 8380 tons from other ports. The tin-plate trade is again under a cloud. The rapid make has brought about a crisis. Some of the works are beginning to reduce their output, and this may help to check the speculators in Liverpool and London.

The sale by auction of the plant, &c., at the Penarth Iron and Steel Works was held on Thursday by Mr. W. P. Stephenson (Stephenson and Alexander), a large company being assembled. Competition for the various lots was brisk, the result being highly satisfactory. The chief items comprised a pair of vertical engines, 60*t.*; drilling machine, 3*t.*; horizontal engine in course of construction, 100*t.*; pair high pressure ditto, 140*t.*; hot cut sawing machine, 30*t.*; steam hammers, 42*t.* to 67.10s.; bar cutting shears, 74*t.* to 86*t.*; special steam pumps, 10*t.* to 13*t.*; for coke and rehammered tin bars ranging from 4*t.* 5s. to 5*t.* 10s. 6d. per ton; wrought scrap iron, &c.

raged 3d. 3s.; hematite pig iron, 6s., the remainder being disposed of at fair marketable prices.

#### SOUTH STAFFORDSHIRE AND EAST WORCESTERSHIRE INSTITUTE OF MINING ENGINEERS.

The fifteenth annual meeting of the above Institute was held on Monday in the Mining Museum, Dudley,

Mr. THOMAS BRETELL, President, in the chair.

The minutes of the previous general meeting and of Council meetings were read and confirmed.

The SECRETARY then read the report of the Council for the past year, which was as follows:—

**GENTLEMEN.**—The Council have pleasure in bringing before you their fifteenth annual report of the proceedings of the Institute. You will find that financially our position is much better than it was when the last annual statement was submitted. During the year nine general meetings and thirteen Council meetings have been held. Fourteen new members and students have joined the Institute, five members have resigned, and four are dead, the list numbering 246, against 231 last year. The receipts this year amount to £502. 2s. 1d., and the expenditure has been £211. 3s. 1d., so that your balance-sheet shows 354. 1s. 1d. to the good, and your bank balance is consequently increased by that amount, and now stands at £461. 4s. 5d., exclusive of quite £64. worth of property in the shape of book cases, books, models, &c., for which credit has not been taken in the balance-sheet. The Council sincerely congratulate you upon the useful work completed and inaugurated during the year.

As the Council informed you last year, whilst the Employers' Liability Bill was before Parliament, this Institute, in connection with the Mining Association of Great Britain, used every effort to bring about the embodiment of an insurance clause in the Bill, and although the great and combined influence then brought to bear was unavailing, there is every proof that the labour expended was not in vain, for the arrangement sought bids fair to be that which will generally prevail by mutual consent between employers and employed, and you have been instrumental after devoting much time and attention to the matter in launching in this district a Miners' Permanent Provident Society, similar to those working so successfully in the north and other parts of the kingdom. It is to be hoped, and there is no doubt, this society will prove a great blessing to miners and their dependents, and a means of strengthening the bond of unity which should exist between masters and men. You appointed a committee to consider and draw up useful and practical rules for the management of steam boilers, and the members of it have completed their labours, and you have had issued to you copies of the rules, which have been very favourably commented upon by the scientific Press and other authorities.

During the past year a movement has been set on foot for removing the home of the Institute from Dudley to Mason's College, Birmingham, and negotiations are now pending between your delegation and one appointed from the College. The Council at an early date contemplated drawing up a list of subjects suitable for papers, and you will be specially urged to give it your attention with a view to bringing something of interest prominently before the Institute. In conclusion, the Council would particularly impress upon members the importance of individual effort in making this Institute more successful by bringing forward any matter of interest, the nomination of members, and by the presentation of scientific works to the library, or models, fossils, specimens, &c., to the museum.

The report of the auditors and balance-sheet were then read and passed.

The scrutineers' report showed that Mr. Wm. Farnworth was elected President, Mr. Daniel Rogers vice-President, Mr. R. Latham treasurer, and Mr. Alexander Smith secretary; and Messrs. J. Bretell, T. Oakes, J. M. Fellows, G. Jones, J. F. Addenbrooke, and Arthur Sopwith as new members of the Council for the current year; Mr. Daniel Rogers declining the office of vice-President, Mr. W. B. Collis, the next on the list, was taken.

Mr. Thomas Hughes, Hart's Hill, Dudley, and Mr. J. Trubshaw Whitehouse, coalmaster, Coseley, were unanimously elected members.

The retiring President then vacated the chair in favour of the newly elected President, Mr. Wm. FARNWORTH, who delivered the following inaugural address:—

**GENTLEMEN.**—I thank you for the honour you have conferred upon me by electing me your President for the current year. I regret I am not more competent to fulfil the important duties the position entails, but relying upon the hearty co-operation and aid of the vice-President, the members of the Council, and Secretary, I trust that at the end of my year of office I shall so far have succeeded in fulfilling those duties that you may have no cause to regret having elected me. I said important duties, for there are but few, if any, Institutes of a similar constitution which hold such an important position in the mining world as the one to which we have the honour to belong; therefore, not only the President, but everyone holding office, and every member connected with it, should consider it not only his duty but privilege to be able to assist in maintaining the high position it has attained by aiding in some way or other to extend its usefulness. This district has been looked upon as the one where the coal and iron trade of England has been matured in its infancy, and developed into full grown dimensions; and although other districts have sprung up lately, still the old district is looked upon with esteem throughout the whole world. From whence has arisen this importance? and why is it held in such high esteem? The reply may be on account of the estimable character of its coal and ironstone; this is certainly true to some extent, but besides this more depended upon the determined perseverance of those engaged in its staple industries, and of those noted for their skill and industry, many of the members belonging to this Institute have figured most prominently. It is only needful to mention Sandwell, Lye Cross, Hamstead, and Cannock and Huntington, when others of a similar kind will crowd upon your memories, with which may be mentioned the names of Johnson, Latham, Peacock, and North; and as long as there remains such men as those amongst us the influence of the Institute for good, especially to the younger members of the mining profession. One good feature of this Institute is the combination of mining and mechanical engineers; it is well that professional caste should be suppressed, for none live for themselves alone, but for the community at large, and after it is considered how much the mining profession has been assisted by mechanical engineers, the propriety of their being combined in one Institute becomes more apparent. We cannot lose sight of the difference in the present mode of working our mines to that in so recent a period as to be well remembered by many of us who are not very old. I refer to speed of winding and quantity raised. Those times referred to are often termed good old times of mining, for although there was less raised the profits were greater. The cause of the difference has, no doubt, been brought about by the contingent expenses entailed upon mining by the Mines Regulation Act, mines drainage, and above all by the eight hours' movement, which places this district under such a great disadvantage compared with other districts, where more hours are worked, hence the necessity of devising some means of working the mines as economically as possible. To accomplish this it was found necessary to call in the aid of the mechanical engineer, hence the ability now by specially constructed winding-engines and ventilating machinery to accomplish the large output at many of our collieries. I do not mean by the remarks just made for it to be considered that it is entirely through improved mechanical appliances the success attained has been accomplished, for much of it is attributable to the increased knowledge of geology, chemistry, and improvements made in the system of modern mining over that of our forefathers, and the time is not far distant when electricity will also be found able to render more valuable assistance both in signalling by telegraphy and the telephone, and also for lighting our mines, and there is every probability of its being rendered available for underground haulage, somewhat similar to Siemens' locomotive, propelled by electric current passed through the rails, and for winding purposes also, if the system of storing electricity, as suggested by Prof. Faure, can be carried out on a large scale as he had succeeded on a small one, having obtained the electricity by means of batteries in Paris, and sent it to Sir William Thompson, in Glasgow, who found, upon its arrival, that it had lost none of its power. This is one of the most important discoveries made in connection with electricity. By this and the transmission of power we may hope to utilise cheap natural sources of energy, such as waterfalls, tidal currents, &c., for the purpose of obtaining electrical power at or near such places, and then convey it to centres of industry and use it for manufacturing or other purposes, instead of steam-power, and this will be most powerfully assisted by Prof. Faure having solved the problem of storing electrical energy, and enabling the energy or power procured to be used at some time or distant place from that at which the power was generated, if this storage can be produced in sufficiently large quantities at the places where natural sources exist. A short time ago I was at the falls of the Rhine in Switzerland, the town of Schaffhausen being in the vicinity, and there I found that a part of the water was utilised to drive the machinery connected with most of the manufactures in the town, although at some considerable distance from the falls. Another instance of the utilisation of natural sources I saw at the mouth of the St. Gotthard Tunnel, where the water had been conveyed in pipes some distance down the St. Gotthard pass, and employed to drive machinery for compressing air to work the drilling machines by which the tunnel was made, besides the machinery in fitting shops, &c., if these and similar natural sources can be made to drive dynamo machines, and obtain electrical power, which may be conveyed by transmission rods to any distance or pent up and stored by accumulators, it is not easy to say to what extent it can be made available for lighting or manufacturing purposes, and it is impossible to say the limits to which the future development of electrical power may be rendered available for the purposes of man, either for mining or mechanical purposes. The recently rapid strides made by electricity has a tendency to cause us to cast a retrospective glance at the progress made in our midst within a comparatively few years. It is only about 50 years since railways commenced, now there are 200,000 miles, costing nearly 700,000,000. Ocean steamers have increased amazingly. In 1838 the first ocean steamers that crossed the Atlantic were built of wood, then they were made of iron, and now that is being replaced by steel; then speed has been increased from 9 to 15 knots per hour, and steam pressure from 5 to 70 lbs. per square inch; and it is a remarkable fact that half the whole shipping of the world belongs to this country. This certainly is a hopeful feature as regards our future prosperity, but at the present time it is no use trying to hide the fact that the mining and manufacturing prospects are not so hopeful as could be wished for by those who are closely concerned with this district, although we acknowledge that trade is better than it was, and it still appears to be still further steadily improving.

I was interested whilst reading a portion of the address given by Sir John Lubbock, as President of the British Association, last year at York. He said—“from the rarely and in many instances the entire absence of reference to the colour blue in ancient literature”—Geiger, adopting and extending a suggestion first thrown out by Mr. Gladstone in some of his works on Greece, has maintained “that even as recently as the time of Homer our ancestors were blue blind.” However true that may be, it is certainly very remarkable that neither the Rigveda of the Hindus, which is probably the oldest literary document still existing, which consists almost entirely of hymns to Heaven, nor the Zendavesta, the Bible of the Parsee or Fire Worshippers, nor the Old Testament, nor the Homeric poems, ever allude to the sky as blue. The inference I wish to draw from this is that though our forefathers were blue blind, had they lived during the last seven years instead of when they did, and been engaged in mining and iron manufacturing, they would have had so many blue looks among them, and things looking so blue around them, that they would have been cured of their colour blindness through coming so constantly in contact with it. But we hope

this is only the blueness of the morning of a coming fine and prosperous time, and that we shall find this blueness rapidly passing away, leaving behind it a sky resplendent with crimson and gold, so that the whole of our beloved country may again have the anxious, worrying, and careworn feeling removed from the hearts of those engaged in trade, and that both masters and workmen will wisely unite in bringing about the long wished for result, for very much depends upon this, for if the action of either or both combined raise material to an abnormal price the result will be as it has occurred before, that our competitors on the Continent who have no heavy legislative restriction, cheaper labour, longer hours, no mines' drainage, and lower railway rates, all of which give the foreign manufacturer considerable advantage over us. We, therefore, hope that each and all will benefit by the past experience, and so help to make the future more satisfactory. And now, again referring to the Institute, as your President, I ask each member to make an effort to further its usefulness by reading a paper or doing something. It has been suggested by the Council that prizes should be offered for essays on different subjects connected with mining, to be composed for by the younger members of the Institute, and also endeavour to procure some lectures by well known and eminent lecturers on subjects likely to be interesting, and it is hoped by these means to increase its usefulness and the interest amongst members.

Mr. C. H. TREGLOW read the following paper upon “Tangye's Improved Hauling and Winding Engines” (illustrated):—

In the laying out and development of colliery operations and other mining enterprises, the manager, or what would, perhaps, be more correct to say the mining engineer, has to deal with and determine upon matters of great importance above ground, as well as below surface, questions which are intimately connected with the safety and well-being of human life, the interests of those who have invested largely relying on his experience and sound judgment, also his own reputation, and the last mentioned is not a little matter in this age of keen competition, acts of legislation, and, lastly, expressions of opinion, and I think you will agree with me that the part of his business which relates to his decision respecting the machinery to be adopted for hauling and winding is the least important. The engines shown by the drawings were made for the Australian Agricultural Company, New South Wales, and are working an underground incline 3000 yards long. The two engines, drums, gearing, &c., are all carried on a massive base-plate, cast in several parts (for ease in transit and erection), carefully planed and fitted together with dowels and turned bolts. The cylinders are 20 in. in diameter, with a choke of 3 ft. 4 in. for compactness and economy. The valve faces come as close as possible to the cylinders, the steam-chest being cast with the cylinders. They are steam-jacketed, the space between the cylinder lining and outer walls of the cylinder is filled with live steam direct from the steam-chest. Heat is power, and loss of heat within the cylinders is loss of power; therefore the importance of maintaining the highest possible temperature of steam cannot well be overestimated. Besides adding to the facility in starting the engine, the steam-ports are large and carefully proportioned, to prevent as far as possible the ill effects of wire drawing large size spring relief valves are fitted at each end of the cylinders. As various causes in the general arrangement of steam-pipes and boilers oftentimes produce an amount of water necessitating the absolute use of large size relief valves, which shall be able to come instantaneously into action to prevent the probable chances of accident. The cylinders have very substantial bases which the holding down bolts pass through, and the front end of the cylinders are machined to receive the ends of the massive beds, each of which is in one large casting containing the guide for piston rod crosshead and the main chair close to the disc. Everyone will admit that any loss through undue and excessive friction produced in construction not only represents loss of effective power but a serious loss annually in a commercial point of view. To obviate this special tools have been at a great expense constructed so that the end of the bed is turned with a plug or filet to fit accurately into the cylinder, and whilst on the machine the cross-head guide is bored, as well as the main chair brasses. By this means a correct true line of centre through the whole is secured, also a perfect right angle for the fly-wheel shaft, each cylinder has a steam stop valve, the steam-pipes are carried overhead, and in a convenient position is the throttle valve for starting and stopping the engines, the exhaust pipes are taken underneath, and out of the house in the usual way. The pistons are of the Ramsbottom type, and the piston rods of steel; the crossheads are of cast-iron, with very large guiding surfaces top and bottom of a circular form, fitted with gun metal shoes, which can easily be changed when worn; but as the pressure in the centre or worst position of the stroke is only about 20 lbs. per square inch, a very considerable time must consequently elapse before any renewal would be necessary. The crosshead is fitted with a steel gudgeon, tapered at each end, and secured by nuts, the connecting rod joint is adjustable with a taper cutter, the discs are cast-iron, carefully balanced, and fitted with crank pins of steel; the connecting rods have lubricators at each end, and the large joints are of the marine type. The main bearings are of gun metal, each in three parts, and so arranged that they can be withdrawn without removing the crank shafts, discs, and fly-wheel. The side brasses are kept up to the shaft by wrought-iron wedges, so that the fly-wheel shaft always retains its original distance from the cylinders, and the clearance consequently remains equal. The slide-valves are of cast-iron, and actuated by eccentric rods and slot link reversing gear. The lifting levers for both links are secured to one balance main shaft carried in bearings between the engines, and as the labour in constantly reversing these large slide-valves, links, &c., would have been too heavy for hand work, a steam reversing gear was fitted, which proved most successful; this arrangement consisted of a small steam cylinder bolted to a cast-iron standard, having a piston rod passing through both ends of cylinder, the lower end being attached to a cross-head having a connecting link jointed to the reversing lever, keyed on the shaft, between the two engines before mentioned. To the upper end of this piston-rod is secured another piston working in a small oil cylinder to prevent the too rapid action of the steam. The top and bottom of oil cylinder is connected by means of a copper pipe, with a cock between. This cock is connected with the steam-valve on the reversing cylinder, so that both are opened and closed simultaneously, and the rapidity and ease at which this engines can be reversed with full pressure of steam on is thus at the will of the engineer. The main shaft is steel, supported towards the centre by a massive chair fitted with gun metal bearings of special wearing surfaces. On this shaft is keyed a cast-iron pinion in halves, shrouded up to the pitch line, and this pinion gears into a spur wheel in halves, also shrouded to the pitch line, carried on a second motion steel shaft, running in substantially made chairs. On this shaft are two drums, 5 ft. diameter and 3 ft. wide, each capable of receiving 3000 yards, or nearly 1½ miles, of 1 in. Cradock's steel wire rope. These drums have cast-iron centre-pieces, fitted with gun metal bushes. These centre-pieces are each kept lubricated by means of two Haven needle lubricators, so that dust and dirt shall not be allowed to enter. They are also joggled to receive the clutches which are of wrought-iron cut out of the solid. The arms, brake beds, shrouds, and faces of the drums are constructed of wrought-iron. The clutches are worked independently of each other, so that one drum can be used lowering the empty trucks while the full ones are ascending the incline. As the haulage was very considerable in length, and the probability that in the development of the property various roads would be crossed at different levels in the incline plane, an indicator or “tell-tale” of special design for each drum is attached, and consisted of a wrought-iron central vertical shaft worked by gearing from the second motion shaft. On the said vertical shaft light cast-iron frames carried in bearings between the engines, and as the labour in constantly reversing these large slide-valves, links, &c., would have been too heavy for hand work, a steam reversing gear was fitted, which proved most successful; this arrangement consisted of a small steam cylinder bolted to a cast-iron standard, having a piston rod passing through both ends of cylinder, the lower end being attached to a cross-head having a connecting link jointed to the reversing lever, keyed on the shaft, between the two engines before mentioned. To the upper end of this piston-rod is secured another piston working in a small oil cylinder to prevent the too rapid action of the steam. The top and bottom of oil cylinder is connected by means of a copper pipe, with a cock between. 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This cock is connected with the steam-valve on the reversing cylinder, so that both are opened and closed simultaneously, and the rapidity and ease at which this engines can be reversed with full pressure of steam on is thus at the will of the engineer. The main shaft is steel, supported towards the centre by a massive chair fitted with gun metal bearings of special wearing surfaces. On this shaft is keyed a cast-iron pinion in halves, shrouded up to the pitch line, and this pinion gears into a spur wheel in halves, also shrouded to the pitch line, carried on a second motion steel shaft, running in substantially made chairs. On this shaft are two drums, 5 ft. diameter and 3 ft. wide, each capable of receiving 3000 yards, or nearly 1½ miles, of 1 in. Cradock's steel wire rope. These drums have cast-iron centre-pieces, fitted with gun metal bushes. These centre-pieces are each kept lubricated by means of two Haven needle lubricators, so that dust and dirt shall not be allowed to enter. They are also joggled to receive the clutches which are of wrought-iron cut out of the solid. The arms, brake beds, shrouds, and faces of the drums are constructed of wrought-iron. The clutches are worked independently of each other, so that one drum can be used lowering the empty trucks while the full ones are ascending the incline. As the haulage was very considerable in length, and the probability that in the development of the property various roads would be crossed at different levels

ment of the Oregon Mine, and I trust that no untoward circumstance will manifest itself to prevent continuous and energetic exertion to accomplish the main object to be held in view—the meeting with the reefs in depth in regular and congenial ground. I have endeavoured to place before you a plain, but exact, report of the works carried out in the past, and glanced at what may be anticipated at a short future date by sound development of the property. I have, from a critical examination of the appearances of the reefs and intruding dykes, the careful analyses of the ores, and the many favourable assays of gold yielded, as well as the fine shows of the precious metal given out from numerous washings of stuff in various parts of the set, formed a high estimate of the Oregon; and feel assured that with fair endeavour the results of the next six months' operations will materially add to the value of this fine mining property.

RAYNAR ST. STEPHENS, Consulting Mining Engineer.

Messrs. ARBUTHNOT AND CO., Madras.

Feb. 25.

By order of the board, T. W. MARTIN, Sec.

## Meetings of Public Companies.

### THE GUINEA COAST GOLD MINING COMPANY.

The statutory meeting of this company was held at the Cannon-street Hotel, on Tuesday, Mr. J. W. JOHNS in the chair.

The SECRETARY having read the notice convening the meeting,

The CHAIRMAN said—Well, gentlemen, this being a statutory meeting we have neither accounts nor report to present to you. For some good cause or other the authorities think that it is desirable the shareholders should meet the directors at an early period after the formation of a company, and that I believe is the only object of a statutory meeting, although at the same time it affords us the pleasure of making one another's acquaintance, and, if possible, the directors an opportunity of obtaining the confidence of shareholders. With regard to the past it will be interesting to our shareholders present to know that the application for shares was open to the public for four days, and that we had an extremely large number of applicants, and I should think there is no shareholders list in the City of London that is a better list than we possess in the Guinea Coast Gold Mine. I am quite sure that most of the shareholders have applied, feeling that they were going to make a good investment, and they know or are rather fairly satisfied that that belief will be fulfilled. We allotted our shares to 509 shareholders, and since the date of allotment the shareholders have been increased to 517 by transfers and purchasers. You will be pleased to hear that no shares have been transferred at less than par and most at a premium, so that now our shareholders stand at 517 in number. We were obliged to send back many applications for shares, for at least a fortnight after the date fixed by advertisement the applications for shares were coming into the office and to the bankers. We were sorry, of course, we could only comply with the prospectus, and allot to those who had applied at the proper time. Now with regard to the present I may say that we have had the lease duly transferred to the company by the vendor, and registered at Cape Coast Castle in proper order. We had to send out an agent there to take possession on behalf of the company, and it has all been done in due form, and you are now in full possession of your property. The board since that time have been as active as they could, because previous to that time they were hardly authorised to make any expenditure. We felt that until the property was vested in the company it would not be proper that we should enter into anything like transactions that should touch upon your funds, but the moment that was carried out we set ourselves vigorously to work, and I am happy to say our transport agent started for the mine on Saturday last from Liverpool with a certain number of rough tools and other materials for clearing the ground for the site of houses we are about to erect for our staff, for arranging for water for the supply of the staff, and for doing all those other necessary works which are preliminary to the arrival of the Europeans who will follow him in about a month or five weeks. Well now with regard to the future I may say on behalf of the board that you may rely on your directors exercising the greatest possible economy in every way. We have got before us some examples from some other companies who have established themselves in the same ports, and we have endeavoured to reap from their doing such information as will guide us very much in our arrangements, and possibly prevent us falling into some of the little pitfalls that they have fallen into, and by that means we shall be doing you, I hope, good service. You will remember that in the prospectus mentioned as made of other mines which are at present working in the neighbourhood. One of those mentioned is the Effuentia. Well they are hard at work, and I am happy to say are now crushing, and news arrived by the last mail on Saturday that the first bullion has been shipped from the company's mine, so that by the next mail, which will be probably in 10 days time, the first gold will actually arrive in this country, and if you will bear in mind that they have been only at work 15 or 18 months, it is an evidence that what we have stated to you will in all probability be fully borne out. The Gold Coast Mine is also hard at work, and they have now got a large quantity of very rich ore on the surface waiting for the erection of their stampa, when in all probability they will ship more bullion than even the Effuentia, and assays made on the spot by their own reduction officer give a most favourable return. You have got also Messrs. Swanson's mine, which has been opened in the same neighbourhood; they have had their first crushing, and, I think, from about 25 tons of ore they sent home something like 30 ozs. of gold, so that, in their crude state, that may also be looked upon as a very favourable return. I have no doubt you will hear more of this in time. These gentlemen have developed their own mine with their own money, and they are shortly, I believe, about to offer it to the public, when you will see what they have to say of it; and I think you will find it bears out what I have said to-day. At first, like a great many other people, I did not believe in the gold; I never had any thing to do with gold mines. Since that time I have been so impressed with the representations I have bought shares in both mines at a very high premium. You are aware Capt. Burton has gone out to our mine. We have delayed the meeting to-day for a week or so in the hopes of having letters from him, but, of course, it is rather uncertain. When a man gets out there he has not a red letter box to drop his letter in, and he has to get it from the mine to the coast; and therefore we are disappointed in not having a letter from the spot. We know this, King Blaz, on whose territory we are working, made a very extravagant preparation for his reception, and I believe when Capt. Burton did arrive he was received with all honour; however, the natives there are very anxious to have the employment of a European company, so that as far as we are concerned, we shall be very well off in that respect. We are also a little better situated than the other gold mines there, inasmuch as they are about 40 miles from the coast, and consequently have to transport all their machinery and all their supplies from the coast to their mine. Well, that until the roads are made good and repaired, which I am told, is a work now occupying the attention of all the native authorities there, is an expensive matter. We are only about four miles from the coast; at any rate, we are very much better placed than the others, and I think we are also better placed so far as our staff will be concerned—we are on the spur of a hill, with the sea only four miles distant, and are in a neighbourhood where there are plenty of fresh provisions to be had, both vegetables and animal food, whereas the other mines have to send out preserved provisions (rice and such things) for the feeding of their staff. We have also made arrangements which we think will tend to the comfort of our workmen very much. Everyone who has a mine out there has a fresh mode of doing the work. Some give their miners and their staff as much per month so much money to feed themselves. That has been found in one case to be rather undesirable, because when a workman comes in from his work probably the first thing he does if his dinner is not ready is to take a nip of something or other, and then he begins to get his food ready, and if his food is not ready probably he takes another nip, and consequently he does not care much about his dinner, and the result is his health suffers. We have adopted a different plan. We are going to send out a man who is to be a sort of husband to the bungalo where the men live, and when they go out at morning everything will be tidied up, and their meals will be ready for them when they come back. I am sure from this we shall get a good class of men, and get better services from them, and do it all the more economically. Well, these are the matters we are turning our attention to at present. There is a very distinguished engineer on the Coast about other matters there whose name is probably known to you—Mr. Oliver Pegler—and he has written home, and in one of his letters, which I have seen, he says "I see gold everywhere." That is a very startling remark to make, but I presume that he sees it very much upon all the natives. I believe the natives, men and women, are all decorated with gold ornaments. But that is his statement. Capt. Burton writes:—"We are getting every possible information for and against these mines, and I neither see nor hear anything to shake my confidence in their magnificent future." Well, now that gentlemen, coming from a person of known distinction, and from a person who, I am quite sure, feels the responsibility he has upon his shoulders in going out there on our behalf, he would not write that unless he was convinced of it. That is very cheering, and enables us to say we see here nothing to shake our confidence in any of the statements we have placed before you up to the present time. Before sitting down I may mention that the application to the Stock Exchange has been delayed at the request of our broker, one of the reasons being that not a very large number of transactions have taken place in our shares, and that occurs more from our shareholders being very firm holders of their shares rather than from any other reason, and he recommends until our final call is made we should defer an application. He says we are sure to get our settlement any day we like to ask for it, but it will depend on whether there are any large number of transactions in the shares whether we shall get our quotation, and it is for that reason we have delayed the matter. We have no doubt when we make the application we shall obtain the settlement. In conclusion the Chairman said that he should be happy to answer any question that any of the shareholders liked to ask.

A SHAREHOLDER proposed a vote of thanks to the Chairman and directors. He believed the statements which had been made were perfectly fair and true statements.

Mr. GRAY seconded the motion, which was carried unanimously.

The CHAIRMAN : Well, gentlemen, I may say on behalf of myself and the other directors I beg to return you my best possible thanks. We appear before you rather as a small body on this occasion, because one of the directors resides in Edinburgh, and as this was only a statutory meeting he did not come to join us. Another is detained in the south of France by the illness of his wife, and Capt. Burton is well engaged in your behalf elsewhere. I am quite sure those who are present and those who are absent will feel it very comforting to receive such a unanimous vote of thanks. You may rely upon it our best endeavours shall be devoted to taking as much care of every expense as we possibly can do. The directors themselves are large holders with you, and, therefore, that is an other inducement to you to feel that no extravagance will be practised. We will endeavour not to make the mistake that some of our neighbours have made

—that is, sending out the machinery before the mine is ready to receive it, or before they have stuff to put into it. Our first object will be to develop the reefs, and after that has taken place we will endeavour to have the machinery on the ground, and as nearly as possible at the right time to begin crushing. We have no doubt whatever we shall meet in times to come under possibly more favourable circumstances. You are aware that gold mining must of necessity, from its character be a tedious process; but that the gold is there and can be obtained in large quantities, I think there is no doubt whatever. When Capt. Burton comes home he will have something to tell us of interest, and the shareholders may rely upon it whenever we have anything cheering or otherwise to tell them they shall have the earliest possible intimation. I think he proposes when he comes back to read paper on the gold of this particular district at the Royal Geographical Society, so that I dare say it will attain a little more notoriety than is usual on these occasions. If there is anything in the meantime from the mines to cheer you up we will certainly let you know it. I do not want to encourage too much printing or postage, because it is all money that would be better devoted to developing the reefs; but we will do it as economically as we can, and you shall have the earliest possible information.

The proceedings then terminated.

### INDIAN GLENROCK GOLD MINING COMPANY.

An extraordinary general meeting of shareholders was held at the City Terminus Hotel, Cannon-street, on Monday,

Mr. R. P. HARDING in the chair.

Mr. S. JENNINGS (the secretary) read the notice convening the meeting, which stated that it was called for the purpose of submitting for confirmation the special resolutions passed at the meeting held on Feb. 4.

The CHAIRMAN said it had been necessary to trouble the shareholders to attend that meeting for the purpose of confirming the resolutions which were adopted at the meeting held three weeks previously. Everything was then so fully discussed, and the feeling expressed by the shareholders left no doubt in the minds of the directors that this confirmatory meeting would be a mere matter of form. He had nothing to add, and he would move the confirmation of the first resolution, which was:

"That the directors be and they are hereby authorised to issue to such persons (or their executors, administrators, or assigns) as at midnight of Feb. 4 were registered shareholders of the company, dividend warrants for sums equal to 20 per cent. of the respective amounts of their shares, such sum to be payable out of the profits to arise from any sales hereafter of any property of the company (whether being property now belonging to the company or acquired under the following resolution), and ranking in priority to all other claims for dividends out of such profits whether in respect of existing shares or of the new shares hereafter mentioned."

General WEY seconded the motion, which was adopted, and the following resolutions were also confirmed:

"That the directors be and they are hereby authorised to purchase for the company the property, business, and assets of the South Indian Gold Mining Company (Limited), the consideration of such purchase being an undertaking by this company to discharge the debts and liabilities of the said South Indian Company, and the costs of, and incidental to the purchase, and the issue by the directors of 100,000 new shares, fully paid up, of £1 each in this company, for distribution amongst the shareholders of the said South Indian Company, and upon such other terms and conditions as to the directors shall seem fit."

"That the capital of the company be increased to 240,000, by the creation of 100,000 new shares of £1 each."

"That the directors be and they are hereby authorised for the purpose of such purchase as aforesaid to enter into and carry out all such agreements, and execute all such documents on behalf of this company as the directors shall seem fit."

"That upon an agreement being duly entered into with the said South Indian Company for the purpose of such purchase, Mr. Thomas G. Gillespie, now a director of the said South Indian Company, shall become a director of this company in addition to the then directors thereof."

The CHAIRMAN said since the last meeting the directors had received information that 10 of the 20 heads of stamps had been erected, and they hoped to hear by the next mail that the other 10 had been erected. It had been intimated that crushing was expected to be seriously commenced in about the month of April, and there was no reason to doubt that would be about the period when they might hope that some good results would be made known.

A SHAREHOLDER asked whether the 3 cwt. of quartz sent over for analysis, the results of which had been sent to the shareholders, had been sent by order of the board.—The CHAIRMAN AS replied in the affirmative.

The SHAREHOLDER asked whether any special instructions were given as to the stone to be sent—that they were strictly to send an average stone. It appeared that no gold was visible in the stone, and if that were so the result was highly favourable to the company.

The CHAIRMAN, in reply, said the directors had long ceased to attach any importance to analyses, but they were anxious to have something in bulk; they had 3 cwt. sent home, which they believed was a sample of one of the reefs, though at the present time they were unable to say from which reef the stone was taken.

As the shareholders had been informed, the quartz had been tested by Messrs. Johnson and Matthey and by Messrs. Claude. In one case the result was 1 oz. dwt., with a little silver, and in the other case about 1 gr. of gold less and 1 dwt. of silver more. The two assays were about equal in value. It had been suggested that the remaining portion of the 3 cwt. should be sent to another gentleman in order that it might be assayed again in bulk, and treated in a different way, and the board considered that it would be very desirable to do this. There was every reason to believe that the sample was a fair average specimen, and it was hoped that the average results of the crushing on a large scale might be something like what had been reported by Messrs. Johnson and Matthey and Claude. The treatment of pyrites was a matter of very considerable importance, because a great deal of the quartz contained pyrites; these were found to be rich, but difficult of treatment. However, an experienced gentleman had been sent out, and had probably arrived in India by this time, who would send over a large quantity of the pyrites for treatment by scientific men who had lately given the subject a great deal of attention, and when that had been done the shareholders would be informed of the results as soon as possible. (Applause.)

The meeting then closed.

### SOUTH INDIAN GOLD MINING COMPANY.

An extraordinary general meeting of shareholders was held at the City Terminus Hotel, Cannon-street, on Monday,

Mr. R. P. HARDING in the chair.

Mr. S. JENNINGS (the secretary) read the notice convening the meeting, which also contained the resolutions proposed to be submitted, having for their object the amalgamation of the Glenrock and South Indian Companies.

The CHAIRMAN said the meeting was convened for the purpose of carrying out the amalgamation proposals put before the shareholders at the meeting held about three weeks ago. Under the advice of their solicitors these forms must be gone through; and, therefore, he moved the first resolution:

"That it is expedient that, pursuant to Section 161 of the Companies Act, 1862, this company should be amalgamated with, and its property, business, and assets transferred to the Indian Glenrock Gold Mining Company (Limited), hereinafter called the Glenrock Company."

Mr. GILLESPIE seconded the motion, which was carried unanimously.

The following resolutions were also moved by the CHAIRMAN, and adopted:

"That this company be wound-up voluntarily, and that Sir John Humphreys and Lieut.-General Edward Wray, C.B., two of the directors, be and they are hereby appointed liquidators for the purposes of such winding-up."

"That the liquidators be and they are hereby authorised to sell and transfer the property, business, and assets of this company to the Glenrock Company, in consideration of the latter company agreeing to discharge the debts and liabilities of this company, and the costs of and incidental to the sale, and in consideration of 100,000 fully paid-up shares of £1 each in the Glenrock Company, for distribution amongst the shareholders in this company, such shares ranking for dividends, subject to a deduction of 25,000/- payable out of the profits to arise from any sales hereafter of any property for the time being belonging to the Glenrock Company, such sum being deductible by way of dividend to the persons who at midnight of Feb. 4, 1882, were the registered holders of the 140,000 original shares of £1 each in the Glenrock Company."

"That the liquidators be and they are hereby authorised to enter into and execute such agreements and other documents as they may think fit to carry out the purposes aforesaid."

The CHAIRMAN said that with respect to the sample of quartz which had been issued by Messrs. Johnson and Matthey and Messrs. Claude, since the Glenrock meeting the secretary had informed him that the directions sent out were that no selections should be made, and he had every confidence that Mr. Pinching would not send over selected specimens which would only be misleading.

The CHAIRMAN, in reply to a SHAREHOLDER, said there had been nothing practical to report, but when the stampa were in full work regular reports would be sent to the shareholders.

The meeting closed with the usual compliments.

### GAWTON COPPER MINING COMPANY.

The annual general meeting of shareholders was held at the offices of the company, Austin Friars, on Thursday,

Mr. GEORGE BATTERS presiding.

Mr. EDWIN F. COLMER (the secretary) read the notice calling the meeting.

The CHAIRMAN said that unhappily the shareholders were aware of the cause why the accounts were not placed in their hands prior to the meeting which was held on the 16th of last month—the illness of Mr. Hickey, the secretary, and he was very sorry that since that time Mr. Hickey had passed away. The promised accounts, as audited, were now before the meeting, and had been printed and circulated amongst the shareholders. Those accounts showed a debit balance of 4000/- odd, which stood to the debit of profit and loss, but in reality represented an amount which had been laid out on works and in construction, and the directors were advised by their very able auditor, Mr. Bolton, that it would be reasonable and just to pass a resolution here-to-day carrying that amount to construction or capital account. Unless such a resolution were passed that 4000/- odd must be wiped off before any dividend could be declared. Then there was the question of calling up the 2s. per share, so as to place the com-

pany perfectly square; there was no necessity to make such a call to-day, as this was the province of the board, and it might be safely left in their hands. (Hear, hear.) In conclusion the Chairman moved the adoption of the report and accounts.—A DIRECTOR seconded the motion.

A SHAREHOLDER said he thought that the capital account should have been set out in rather fuller detail.

Mr. MOSES BAWDEN said it would be done in future.

The SHAREHOLDER said the accounts should have shown the cost of the arms works, independent of labour cost.

The CHAIRMAN said the details were fully set out in the auditor's accounts, but it was not easy to set out all the details in a printed balance-sheet.

The SHAREHOLDER said he thought it was bad policy to call up the remaining 2s. a share, as it was a good guarantee to the bankers in the event of temporary advances being required.

Mr. MOSES BAWDEN said the real point they had to look to was what they had to deal with, and the accounts showed they had a balance against them of over 4000. He considered the position of the company was a very good one. It would be remembered that a year or two ago he said that if they could put up arsenic works the consideration the first two or three sales would absolutely pay for the whole expense of building the works. The sum of 1519/- had since been spent upon the arsenic works. The two sales of arsenic had realised 1000/-, the greater part of which was delivered, and the remainder ready for delivery. Referring to the mine, he said the mundic in the mine was second to none in the two counties, and any shareholder who went down to see the property would be thoroughly satisfied. He would read Capt. Rowe's report received that morning.

Feb. 26.—There is no particular change in the character of the lode in 117 east end, being 6 ft. wide, producing 2 tons of arsenical mundic mixed with iron pyrite. The lode in the stopes in the back of this level (the 117) is yielding 12 tons of mundic and one per fathom. The lode in the 105 end is showing a very kindly appearance, yielding 15 tons of mundic and one per fathom. The lode in the winze sinking below the 105 is also improving; worth 20/- per fathom for copper and mundic. The lode in the stope and rise in the back of the 105 is going up 6 ft. wide; worth 15 tons of arsenical mundic per fathom.—GEORGE ROWE, GEORGE ROWE, jun. He considered this a very important report indeed, and he had no doubt they would see better times. In the course of a discussion which ensued on the advisability or not of the company selling refined arsenic, the Chairman said he was in favour of letting well alone, and selling crude arsenic—at any rate, for some time to come. The idea of the copper mines in the district smelting their own ores was not to be considered.

Mr. JAMES asked what was the length of the arsenic flues, and whether any arsenic was lost?

Mr. MOSES BAWDEN said the flues were 2000 feet long from the chimney, but taking into account the zigzag they would be about 6000 ft. in length, and not a particle of arsenic soot would pass through the chimney. They had a waterfall about midway between the works and the chimney, which threw down the whole of the arsenic.



all other things clear. Rails have advanced all round, and record a gain of  $\frac{1}{2}$  to  $1\frac{1}{2}$ , Scotch stocks being to the front on the changes. Southern lines have today made progress. Americans, after recovering and being good on Tuesday, fell quickly away once more on stringency of money, and are about mid-way between the highest and lowest figures that have of late ruled. Canadians have gradually strengthened, and but for the unfavourable Trunk traffic to-day (Grand Trunk 4286, decrease; Chicago and Grand Trunk 2102, increase) would have further improved, but at the finish to-day are dull.

**NEWCASTLE-ON-TYNE.**—Messrs. J. S. CHALLONER and SON, stock and share brokers, Dean-street (March 2), write: West Cumberland Iron shares are in demand, and have improved  $\frac{1}{2}$ , to  $14\frac{1}{2}$ ,  $14\frac{1}{2}$ . Bolckow, Vaughan shares are a shade lower, 20*l.* paid shares  $\frac{1}{2}$ , at  $28\frac{1}{2}$ , and the 12*l.* paid  $\frac{1}{2}$ , at  $16\frac{1}{2}$  to  $18\frac{1}{2}$ , while the 5 per cent. pref. shares remain firm at  $21\frac{1}{2}$  buyers. Chillington Iron  $\frac{1}{2}$  lower at  $23$  to  $23\frac{1}{2}$ ; Darlington Iron  $\frac{1}{2}$ , to  $4\frac{1}{2}$ ,  $4\frac{1}{2}$ ; Barrow Steel, 13*l.* ditto 6 per cent. pref., 12*l.* Palmer, A, remain at 31, while B shares are lower at  $21\frac{1}{2}$ . The declaration of a favourable dividend is expected daily, therefore we cannot account for the fall in these shares. Teeside Iron ordinary remain at  $23\frac{1}{2}$ , and ditto pref. at  $\frac{1}{2}$  prem. Lawes, 5*l.* Langdale,  $\frac{1}{2}$  better,  $3\frac{1}{2}$ . North-Eastern Bank, having been done at  $40\frac{1}{2}$ , have fallen to  $4\frac{1}{2}$  per share. Newcastle Gas stock remains equal to  $150$ , com. div., being now quoted  $145\frac{1}{2}$ , ex div. Swan's Electric Light are  $\frac{1}{2}$  better at par, business having been done at this price. Newcastle Chemical, 7*l.* 10*l.* paid are at 15*l.* per share (being a fall of  $2\frac{1}{2}$  per share since the issue of the report), business having been done to-day at the price, which is  $\frac{1}{2}$  better than the price of a few days ago. Unless there should be an improvement in the chemical trade shortly, the look-out for the shareholders of this company must be a very gloomy one.

#### SCOTCH MINING AND INDUSTRIAL COMPANIES SHARE MARKETS.

**STIRLING.**—Mr. J. GRANT MACLEAN, sharebroker and ironbroker (March 2), writes:—During the past week markets have been quiet, owing to the doubtful state of politics, but since the fortnightly settlement has been arranged, at lighter rates of continuation the tendency for the new account (March 16) seems rather towards improvement, and investors are beginning to be attracted by the lower range of prices and the easy state of the money market.

In shares of coal, iron, and steel companies the movements for the week are most downwards. Marcella have declined 7*l.* 6*d.* per share, to  $54$ ,  $16\frac{1}{2}$ ,  $3d.$  In the Scotch pig iron market the price of warrants have declined from 4*l.* 2*d.* to 4*l.* 10*d.*, but is now recovering, owing to the resolution to continue the output; the easier money market is also in favour of iron, but the American demand is disappointing, although it is 50 per cent. better than at this time last year. Altarn Colliery are at 32*l.* 6*d.*; ditto 7 per cent. bonds, 20*l.*; Chatterley Iron, 6*l.* to 7*l.*; Cardiff and Swansea Coal, 50*l.* to 55*l.*; Ebbw Vale declined to  $9\frac{1}{2}$ %, but are now steadier, at 10 to  $10\frac{1}{2}\%$ ; Llwyni and Tondu, 7*l.* to 8*l.*; ditto (preference), 6*l.* to 7*l.*; Padieston Colliery, 5*l.*; Solway Hematite, 85 to 100*l.*; and Spence's Manufacturing Metal, 10*l.*

In shares of foreign copper and lead concerns the prices are steady. Tharsis, however, have declined from 40*l.* to 40*l.* Huntingdon are at 38*l.* 6*d.*; Santa Cruz, 11*l.* 3*d.* to 12*l.* 6*d.*; and York Peninsula, 3*l.* 9*d.* to 6*l.* 3*d.*

In shares of home mines there is no particular alteration to notice. Glasgow Caradons are lower at 17*l.* to 18*l.*, and their share on the 23rd ult. of 160 tons of copper ore realised 639*l.* 14*s.*, or almost 4*l.* average per ton; this is the first sale for the current financial year, while last year 200 tons had been sold, and realised 746*l.* 6*s.* Cawood are 2*l.* 6*d.* to 5*l.*; Carr Camborne, 7*l.* 5*d.* to 10*l.* 4*d.* D'Eresby Mountain, 20*l.* to 30*l.*; Devon Copper and Blende, 15*l.*; Drakewalls, 10*l.* to 15*l.*; Devon Friendship, 7*l.* 6*d.* to 10*l.*; East Wheal Rose, 10*l.* to 15*l.*; East Caradon, 2*l.* 6*d.* to 5*l.*; East Chiverton, 2*l.* 6*d.* to 32*l.* 6*d.*; East Roman Gravels, 12*l.* 6*d.* to 17*l.* 6*d.*; East Craven Moor, 5*l.* to 10*l.*; East Van, 10*l.* to 15*l.*; Great Holway, 4*l.* to 5*l.*; Huntington Downs, 17*l.* 6*d.* to 22*l.* 6*d.*; Killifreth, 42*l.* 6*d.* to 47*l.* 6*d.*; Langford, 8*l.* 6*d.* to 10*l.*; Lady Ashburton, 7*l.* 6*d.* to 5*l.*; Mounts Bay, 2*l.* 6*d.* to 5*l.*; Mona, 6*l.* to 7*l.*; North D'Eresby, 4*l.* to 6*l.*; New Peever, 5*l.* to 10*l.*; New West Goginan, 20*l.*; New Terras, 20*l.*; North Herodstool, 5*l.* to 7*l.* 6*d.*; Old Owlccombe, 5*l.*; Old Gunnislake, 5*l.* to 10*l.*; Old Shepherds, 7*l.* 6*d.* to 12*l.* 6*d.*; Pednandrea, 8*l.* 6*d.*; Prince of Wales, 8*l.* to 10*l.*; Pandora, 8*l.* to 15*l.*; South Frances, 14*l.*; South Crobar, 2*l.* 6*d.* to 5*l.*; South Tolcarne, 10*l.*; South D'Eresby, 7*l.* 6*d.*; Tankerville, 5*l.* to 6*l.*; Tin Hills, 12*l.* 6*d.* to 17*l.* 6*d.*; Tresavean, 5*l.* to 10*l.*; Walkham United, 10*l.* to 15*l.*; West Chiverton, 2*l.* 6*d.* to 5*l.*; West Llwyni, 12*l.* 6*d.* to 17*l.* 6*d.*; Wheat Agar, 12*l.* 6*d.* to 15*l.*; Wheat Crebor, 4*l.* 6*d.* to 7*l.* 6*d.*; Wheat Jane, 20*l.* to 25*l.*; Wheat Jewell, 7*l.* 6*d.* to 10*l.*; and Wheal Lusky, 2*l.* 6*d.* to 5*l.*

In shares of gold and silver mines business continues quiet. Richmonds have improved to  $10\frac{1}{2}$ %; but the others are generally lower. Akankos are at 5*l.* to 10*l.*; Anglo-California, 3*l.*; Chontales, 3*l.* to 5*l.*; Color, 5*l.* to 10*l.*; East Sheboygan, 3*l.*; Eschequer, 2*l.* to 4*l.*; Great Southern of Myore, 1*l.* 6*d.*; Gold Coast, par to 5*l.* prem.; Gold Hills, 10*l.* to 15*l.*; Hoover Hill, 5*l.* to 10*l.*; Indian Glenrock, 17*l.* 6*d.* to 20*l.*; Indian Phoenix, 12*l.* 6*d.* to 15*l.*; Indian Kingstone, 7*l.* 6*d.* to 12*l.* 6*d.*; Indian Trevelyan, 10*l.* to 12*l.* 6*d.*; Kapangas, 8*l.* 9*d.* to 11*l.* 3*d.*; London and California, 3*l.*; Mysore Reefs, 4*l.* to 6*l.*; New Gold Run, 1*l.* 6*d.*; Olathe Silver, 2*l.* 6*d.*; Potosi, 13*l.* 9*d.* to 15*l.*; Rio Grande do Sul (B), 7*l.* 6*d.*; Utah Silver, 3*l.*; Wala Wynand, 4*l.* 6*d.*; and West Frontino, 17*l.* 6*d.*.

In shares of oil and miscellaneous companies business continues restricted. Upshall Oil have declined to  $8\frac{1}{2}$ %; Kimberley North Block Diamond are at 6*l.*; and Lawes' Chemical, 5 to  $5\frac{1}{2}$ %.

**EDINBURGH.**—Messrs. THOMAS MILLER and SONS, stock and share brokers, Princes-street (March 2), write:—The announcement of the North British Railway dividend at the rate of  $4\frac{1}{2}$  per cent. gave a firmer tone to the home railway market. The price of that stock, which closed on Wednesday last at  $93\frac{1}{2}$ , rose to  $94\frac{1}{2}$ , from which it has since receded to  $94$ . Caledonian Railway Ordinary Stock is almost un-changed, at 110%. Highland has receded from 105 to 104. Great North of Scotland, on the announcement that there will be no dividend on that stock, has fallen from  $61\frac{1}{2}$  to  $58\frac{1}{2}$ %. Preference and Debenture stock show very little change. In Canadian there is a distinct improvement. Grand Trunk Ordinary has risen from  $16\frac{1}{2}$  to  $18\frac{1}{2}$ , and the Third Preference from  $33\frac{1}{2}$  to  $35\frac{1}{2}$ ; Great Western of Canada from  $10\frac{1}{2}$  to  $11\frac{1}{2}$ %. Americans were for a time very strong, but have become easier again. On balance, New York, Pennsylvania, and Ohio First Bonds have risen from  $44\frac{1}{2}$  to  $48$ , the Second from  $15\frac{1}{2}$  to  $16\frac{1}{2}$ %, and the Third from 9 to  $9\frac{1}{2}$ %. Erie have advanced from 38 to  $35\frac{1}{2}$ . Readings are slightly lower, at  $30\frac{1}{2}$ %. In banks National has receded from 295 to  $293\frac{1}{2}$ . North of Scotland from  $11\frac{1}{2}$  to  $10\frac{1}{2}$ %. In insurance shares, North British and Mercantile have declined from  $67\frac{1}{2}$  to 66, City of Glasgow Life from  $7\frac{1}{2}$  to  $7\frac{1}{2}$ %, Life Association from 28 to 27. In mines, Clyde Coal have declined from 50*l.* to 43*l.*, Canadian Copper and Sulphur from 25*l.* to 24*l.*, Birkenhead Coal from 4*l.* to 3*l.*, Glasgow Caradon from 19*l.* 6*d.* to 14*l.* 6*d.*, Marcella Iron from  $54\frac{1}{2}$  to  $51\frac{1}{2}$ %. Tharsis from  $41\frac{1}{2}$  to  $41\frac{1}{2}$ %. Broxburn Oil have receded from 28*l.* to 28*l.*, Uphall Oil from  $8\frac{1}{2}$  to  $8\frac{1}{2}$ %, and Burntisland Oil from  $7\frac{1}{2}$  to 7*l.*

#### IRISH MINING AND MISCELLANEOUS COMPANIES SHARE MARKET.

**CORK.**—Messrs. J. H. CARROLL and SONS, stock and share brokers, South Mall (March 1), write:—Markets were again very steady today, though the amount of business done was not large. Great Southerners were in demand at 11*l.*, and Midlands changed hands at  $8\frac{1}{2}$ i. No change in Bandons or Passages. National Banks were down at  $22\frac{1}{2}$  to  $22\frac{1}{2}$ %, and Munsters at  $6\frac{1}{2}$ %. Provincial also changed hands at  $5\frac{1}{2}$ , and Bank stock at 31*l.* Cork Steam Packets remain  $10\frac{1}{2}$  to  $10\frac{1}{2}$ %, and Lyons  $4\frac{1}{2}$ %, ex div. Gas shares were offered at  $6\frac{1}{2}$ %, and Dalys at 3*l.* Goulding's remain  $7\frac{1}{2}$  to 8, and Levy's 5 to  $5\frac{1}{2}$ %.

**COAL IN FRANCE.**—Returns relating to the coal trade in France last year show a diminution in the imports of that article as compared with 1880, owing partly to the increased productiveness of French mines. The total imports were 8,108,781 tons, against 8,451,129 tons in 1880, while the exports show an increase, the figures being 724,885 tons, against 546,455 tons in 1880. The output of coal in the Nord and Pas-de-Calais last year was 8,989,349 tons, and the net increase as compared with the previous year 443,437 tons.

**CALIFORNIA GOLD MINES.**—In explaining the unexpected difficulties with which they had to contend the directors state that when the company was brought out part of the shares were subscribed in this country, and negotiations were entered into in Paris with a Syndicate of financiers to place another portion there. The Syndicate in question insisted as part of the arrangement that they should be allowed to take the whole of the balance of shares, and that the vendor should consent to lock up his shares for a given period. After delay the agreements were prepared, but the late financial crisis in Paris then prevented the Syndicate from completing their engagements. Under these circumstances the directors applied to the vendor, who has consented to take so large a proportion in shares of the amount he was to have obtained in cash that the sum needed is now within the compass of the share capital already placed. Working possession of the mine was obtained on June 16, and the result of the work for the ensuing nine full weeks runs was a realised profit of over 400*l.* new standing to the credit of the company, an amount equal to the average profits stated to have been obtained for the previous two years. The adjoining mines having recommenced operations the directors are informed that the water is now drawn off from this company's mine, so that work can be forthwith resumed. The shareholders will thus understand why the weekly returns from the mine have been suspended. Mr. Rickard reports that there is one enough in sight for several years ahead, and that with the additional power contemplated a large increase to the former output can be relied on with a consequent increase in the former profits. The shareholders may thus fully rely on a speedy realisation of the prospects held out in the original prospectus. One of the directors leaves England for Colorado this week to complete the purchase and to take the necessary steps for the immediate resumption of work.

## SUPPLEMENT TO THE MINING JOURNAL.

SUPPLEMENT TO THE MINING JOURNAL.

[MARCH 4, 1882]

## THE ERIMUS STEEL COMPANY.

POSTAL ADDRESS—MIDDLESBOROUGH.

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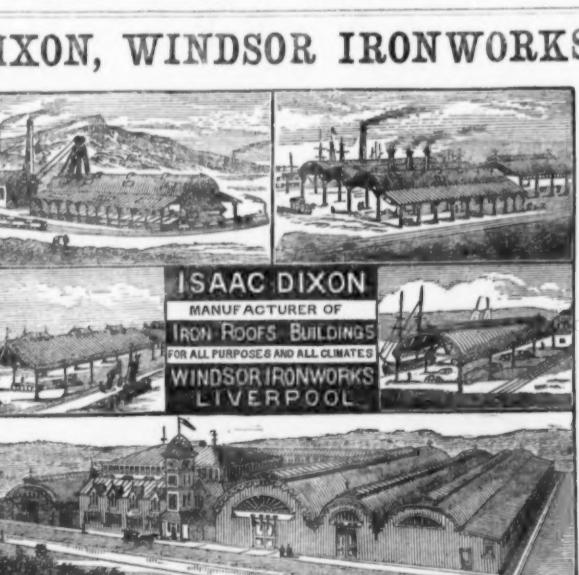
ALSO OF

BLAKE'S STONE BREAKERS.

ESTIMATES GIVEN UPON INDENTS AND SPECIFICATIONS.

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FOR ALL PURPOSES AND ALL CLIMATE.  
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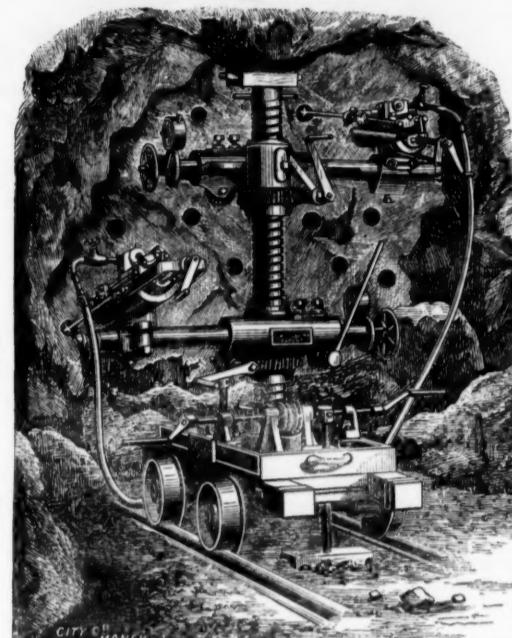


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This machine has been constructed after a long practical experience in the requirements necessary for Cornish mines. The result has more than realised our expectations. Our chief objects in view were GREATER DURABILITY and LESS LIABILITY TO DISARRANGEMENT, but it has also proved itself MORE EFFECTIVE. (Vide Report.)

CAMBORNE, 8TH DECEMBER, 1881.

SIR.—Having been requested by the Council to superintend the Rock Drilling Machine Contest, held at Dolcoath Mine to-day in connection with the above Institute, I beg to hand you the following report:—

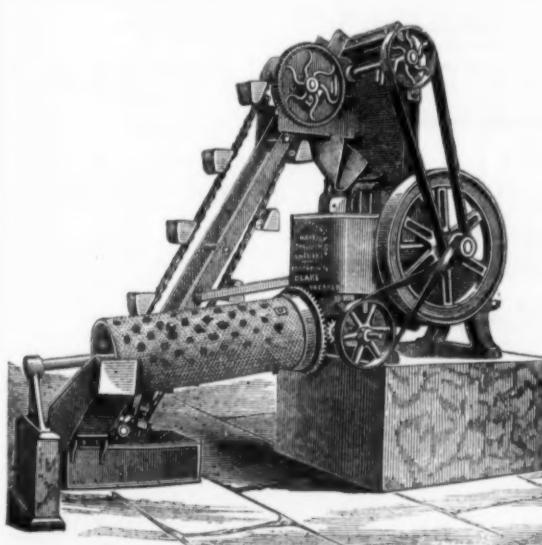
The competing machines were the "Barrow," the "Cornish," and the "Eclipse"—each was fixed on the same mounting bar, and bored into the same stone. The result of the boring were as follows:—

Name of Machine.	Diameter of cylinder.	Diameter of Drill.	Time boring.	Depth bored.	Cubic inches of ground cut.	Cubic inches cut per minute.	Mean pressure per square inch.	Remarks.
	In.	In.	Min. Sec.	In.			Lbs.	
Cornish.....	3½	2	1 15	4½	14·1	—	—	
" .....	—	1½	55	9	21·6	—	—	
Total.....	3½	—	2 10	13½	35·7	16·4	61	
Eclipse.....	3½	2	40	—	—	—	—	Ran into Cornish hole; hole not properly watered.
" second try .....	—	—	2 0	1	—	—	—	
" third try .....	3½	2	35	11½	35·3	13·6	60	
Barrow.....	4	1½	15	½	1·2	—	—	Gland to mounting bar broke.
" .....	—	—	2 0	8½	19·18	—	—	
Total.....	4	1½	2 15	8½	21·0	9·3	60	

I am, Sir, your obedient servant,  
To R. H. Williams, Esq., C.E., President of the Mining Institute of Cornwall.

JAMES HOSKING, M.E.

Address—  
**HOLMAN BROS.,**  
CAMBORNE FOUNDRY AND ENGINE-WORKS, CAMBORNE, CORNWALL.



## PATENT IMPROVED Blake Ore Crusher,

WILL CRUSH ALL KINDS OF ORE AND EMERY STONE  
To fine grain powder, the required fineness being regulated by the mesh placed on the screen.

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Have probably had more experience in the manufacturing of

**STONE BREAKERS & ORE CRUSHERS**  
Than any other Firm in the World.

PRICES AND PARTICULARS ON APPLICATION

**PHÖENIX WORKS,  
STALYBRIDGE.**

VICTORIAN YEAR BOOK.—The eighth yearly edition of this very valuable volume—that for 1880-81—has just been delivered in this country, and affords abundant evidence that the Government Statist of Victoria—Mr. H. HEYLIN HAYTER—has relaxed nothing in activity, the work displaying even greater research than its predecessors. It has already been mentioned that in Victoria there are Courts of Mines having jurisdiction concerning all questions or disputes which may arise out of mining on Crown lands. The places at which they were held in 1880 numbered 22, and the Courts held numbered 68, occupying 32 days. The total number of suits was 13, and the aggregate amount or value of demand 5597. The amount of costs awarded to the plaintiff was 917, and to the defendant 2357. These figures do not include all the mining disputes which took place during the year, as those of minor importance are adjudicated on by the wardens of the gold fields. In the ten years prior to 1880 the value sued for in the Courts of Mines amounted in the aggregate to 501,024. Schools of Mines have been established for some years at Sandhurst and Ballarat, Messrs. A. Mica Smith and Mr. H. Barnard, the respective registrars, having given some interesting details concerning the institutions under their care. Very low fees are charged, and the average number of students is 245 at Sandhurst and 90 at Ballarat. The number of gold mining companies registered in 1880 was 390, the nominal capital of which was 3,496,732., and the number of shares 6,846,549. These figures show a great increase. In the five years prior to 1880 there were altogether 509 mining companies registered, with a nominal capital of 5,330,327., divided into 7,092,454 shares. The entire 500 pages are replete with interesting information, the publication of which cannot fail to be beneficial to the colony, and Mr. Hayter can scarcely be too highly congratulated upon the admirable manner in which he has performed the very laborious task entrusted to him.

CASSELL'S PUBLICATIONS.—Science for All, part 52—it is now announced that it is to be completed in 60 parts—contains articles on a Seed, by Dr. Robert Brown; on High Clouds and Moonshine, by Dr. R. J. Mann; on the Anatomy of Ants, by Dr. F. B. White; on a Lump of Sugar, by Mr. David Houston; on Petroleum, by Mr. David Bremner. The Life and Work of St. Paul, part 2, extends from the date of Saul of Tarsus becoming "bar mitzvah" as a Jew and a Pharisee, and the chapter on the first Pentecost. The History of Protestantism, part 33, extends from the coronation of Edward VI. to the beginning of Book 24, treating of Protestantism in Scotland. Knight's Dictionary of Mechanics, part 63, extends from Rosthorn's Gun-Metal to Safety-lamps.

MALLEABLE TUBE CONNECTIONS.—The invention of Mr. H. F. BAKER, of Smethwick, consists in the making of pipe or tube connections and accessories, such as bends, unions, elbows, tee-pieces, sockets, diminishing joints, and crosses in malleable cast-iron instead of wrought-iron, of which they are now made. The advantages consist in the cheapness, facility, and ease of manufacture; also in the exact multiplication of the various parts before mentioned, and of being able to produce them with a better and neater finish; also in the facility afforded of imparting to any of the parts mentioned any modification of form or thickness which may be desirable for any particular purpose. The said malleable castings would be equal in strength in every respect to the same article made in wrought-iron, which are welded.

METALLIC FABRIC.—In manufacturing the material invented by Messrs. Schütz and Juel, of Wurzen, the metal intended to be used is rendered into small particles, short or long according to requirements, and mixed with a sticky material, such as india-rubber; this mixture is then by hand or otherwise transferred to the backing or fabric, consisting of (say) cotton, wool, linen, silk, or half silk; the fabric is then dried and calendered, or pressed in any suitable manner, receiving at the same time a pattern if desired. The metal cloth thus produced is not stiff, but remains soft. The liquid, sticky with metal charged mixture, does not penetrate to the underside of the fabric, which thus remains clean.

MELTING AND ANNEALING POTS.—The invention of Mr. J. BROWN, of Cradley, consists in making pots for melting or annealing malleable or other iron, or other metals, of Bessemer steel, or other steel alone or combined. He casts the pots of any suitable form and size in Bessemer or other steels, and then anneals them, after which they take the place of ordinary casting or annealing pots at considerably less cost, and save much expense in pots for galvanising iron.

HOLLOWAY'S OINTMENT AND PILLS.—OUTWARD INFIRMITIES.—Before the discovery of these remedies many cases of sores, ulcers, &c., were pronounced to be hopelessly incurable, because the treatment pursued tended to destroy the strength it was incompetent to preserve, and to exasperate the symptoms it was inadequate to remove. Holloway's Pills exert the most wholesome powers over the unhealthy flesh or skin, without debarring the patient from fresh air and exercise, and thus the constitutional vigour is husbanded while the most malignant ulcers, abscesses, and skin diseases are in process of cure. Both Ointment and Pills make the blood richer and purer, instead of permitting it to fall into that poor and watery state so fatal to many labouring under chronic ulcerations.

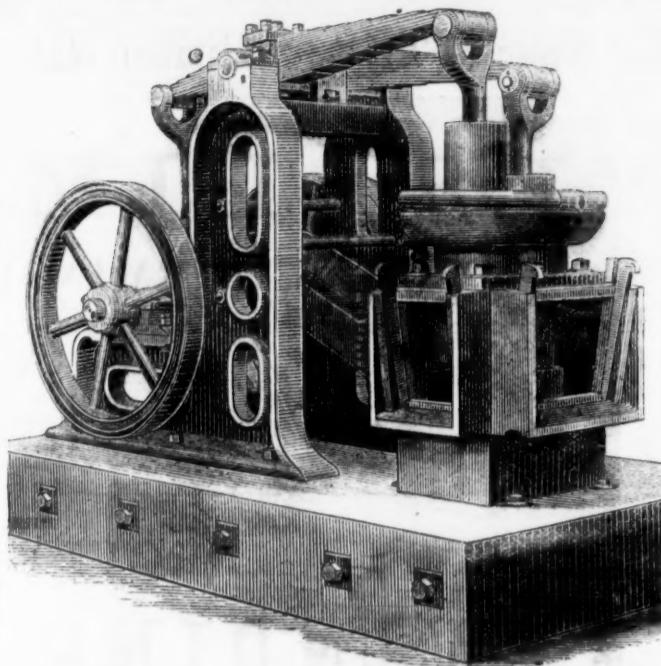
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THIS MACHINE CAN BE SEEN  
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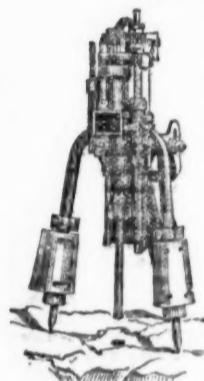
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**PATENT DETACHING HOOK**

To prevent over winding

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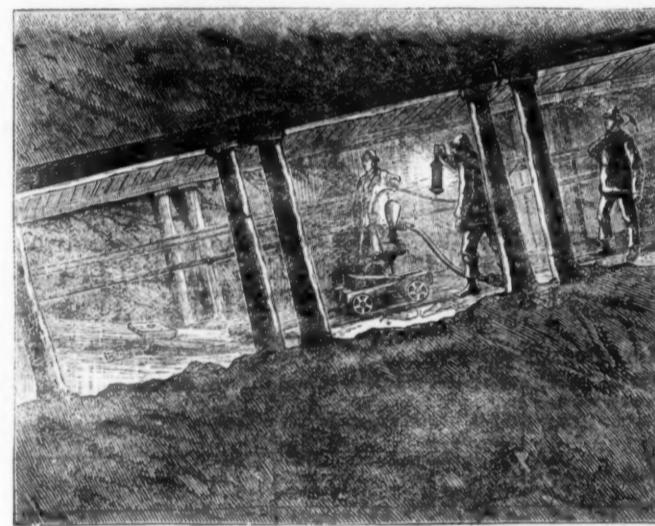
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References: A. L. ELDER, Esq., Bishopsgate-street; A. J. SCRUTTON, Esq.,  
Stock Exchange; and Editor of the MINING JOURNAL, London.

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The IRON AND COAL TRADES' REVIEW is extensively circulated amongst the  
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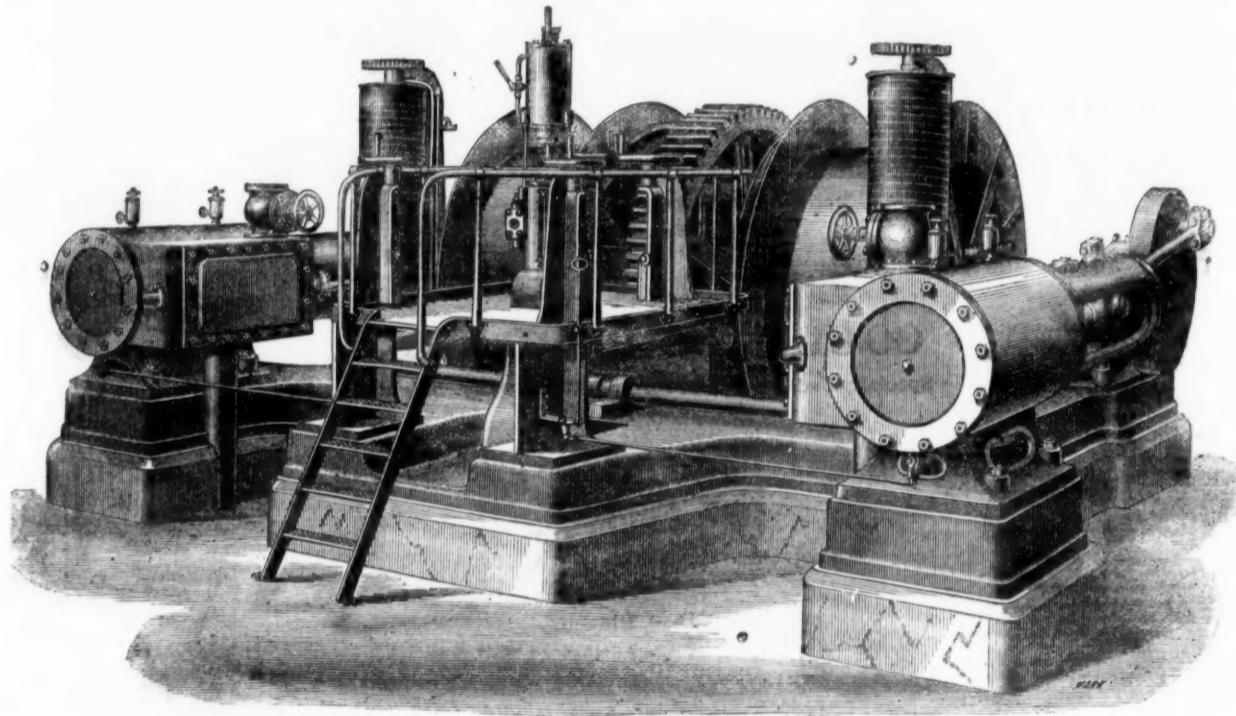
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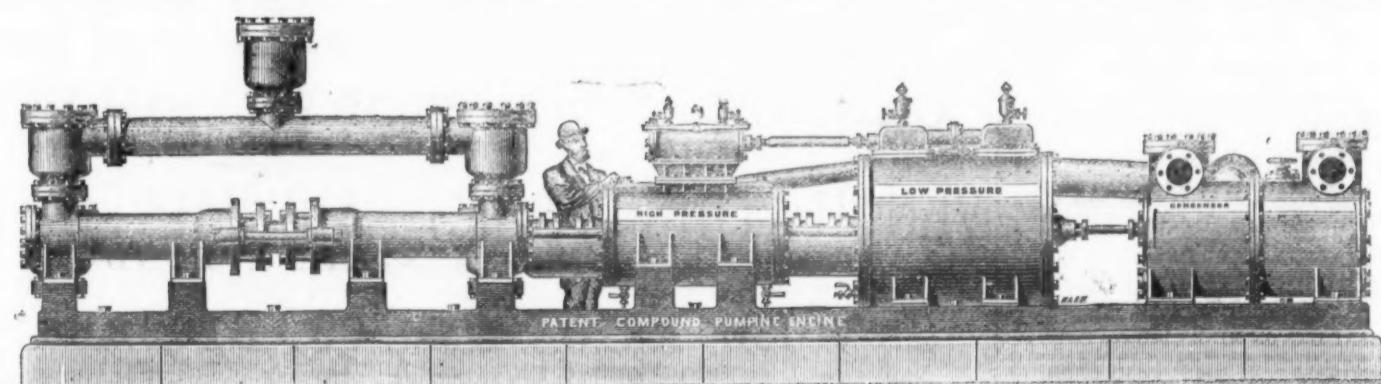
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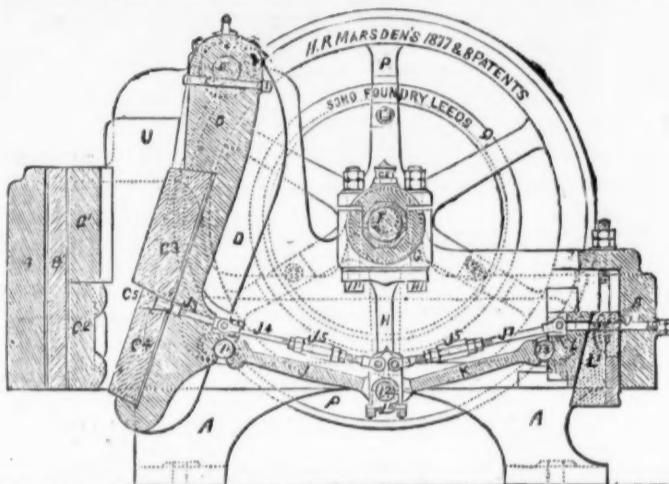
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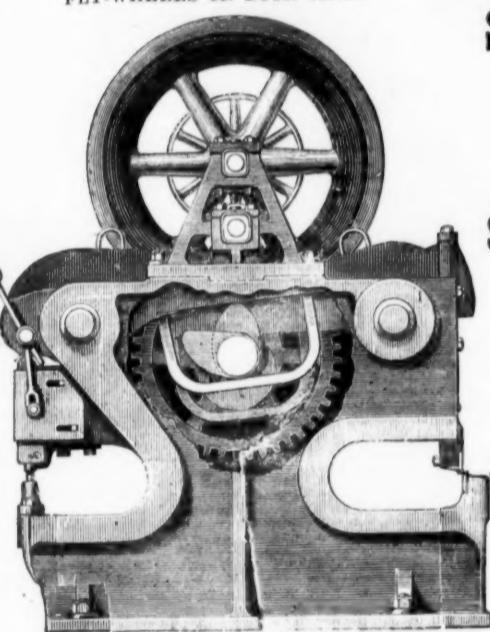
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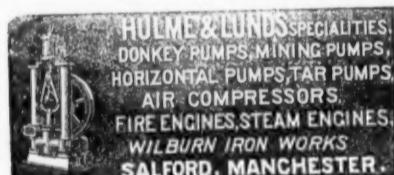
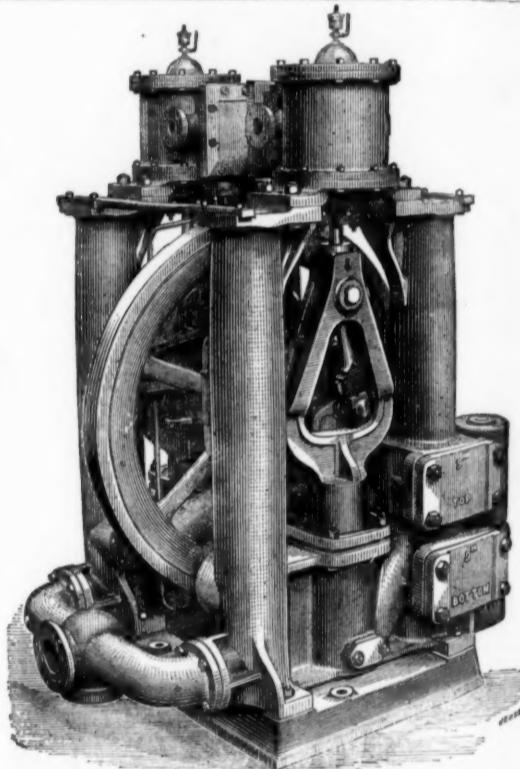
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